JPRS 76449

19 September 1980

USSR Report

ENERGY

No. 30

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

JPRS 76449

19 September 1980

USSR REPORT

ENERGY

No. 30

CONTENTS

ELECTRIC POWER

Urals Energy Resources Detailed
(Ye. Makarov; EKONOMICHESKAYA GAZETA, Jun 80).......... 1

Problem of Involving Geothermal Energy in Fuel-Energy Balance
(R. Malkhazyan; KOMMUNIST, 8 Jul 80).................... 5

High-Voltage Lines Undergo a 'Test-Run'
(L. Myslivtsev; MOSKOVSKAYA PRAVDA, 8 Jul 80).......... 9

Briefs

Future GES Site 12
Caucasus Power Lines 12
Power for GES Construction 12
Energy Conference Recommendations 13
Order of Lenin Awarded 13
Chernobyl'skaya AES Second Phase 13
Power-Line Protection Device 13
Ekibastuz Power Complex 14

FUELS

Problems of Production, Use of Fuel and Energy
(R. Leshchiner; POLITICHESKOYE SAMOOBRAZOVANIYE, 28 Jul 80).. 15

Increasing Role of Gas Industry
(SOBRANIYE POSTANOVLENIY PRAVITEL'STVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK, No 14, 1980)... 27

Gas Industry Achievements Detailed
(EKONOMICHESKAYA GAZETA, Jul 80)........................ 37

Ukase Orders Managers Penalized for Misuse of Gas
(VEDOMOSTI VERKHOVNOGO SOVETA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK, 14 May 80)............. 38

Baku Conference Discusses Deep Well Drilling
(Azerinform; BAKINSKIY RABOCHIY, 10 Jul 80)........... 40

New Administration Created in Oil Industry
(V. I. Kremnev Interview; SOTSIALISTICHESKAYA INDUSTRIYA, 16 Jul 80)................................ 41

Searching for Petroleum and Gas
(I. Novodvorskiy; IZVESTIYA, 26 Jul 80)................ 44

Samgori-Batumi Oil Pipeline
(I. Shvarts; SOTSIALISTICHESKAYA INDUSTRIYA, 15 Jul 80)... 45

Katek Coal Supply Reported
(B. Pichugin; SOTSIALISTICHESKAYA INDUSTRIYA, 17 Jul 80)... 47

Neryungri and Southern Yakut Territorial-Production Complex
(E. Gonzal'yez; TRUD, 27 Jul 80)....................... 50

Longwall Mining Machines' Potential Not Fully Utilized
(V. Nikitin; SOTSIALISTICHESKAYA INDUSTRIYA, 4 Jul 80)... 55

New Caspian Offshore Oilfield Found
(L. Tairov; PRAVDA, 13 Jul 80)......................... 60

Briefs
- New Deposit in Work 62
- New Pipeline in Operation 62
- First Oil From Yamalo-Nenetskiy Okrug 62
- Baltic Area Petroleum Operations 62
- Leak Detection 63
- Diesel Fuel 63
- Oil Well Heater 63

ELECTRIC POWER

URALS ENERGY RESOURCES DETAILED

Moscow EKONOMICHESKAYA GAZETA in Russian No 26, Jun 80 p 16

[Article by Ye.Makarov, special correspondent in Sverdlovsk: "The Departmental Boundary"]

[Text] Labor forces of the Central Urals are steadfastly economizing on power resources and making more efficient use of them. This year, in the course of a general reappraisal, the oblast' has already saved more than 150 million kilowatt-hours of electric power and 100,000 tons of standard comparison fuel over and above standard levels.

A substantial share of this burden is being borne by the electric power industry itself. "Sverdlovenergo," the regional power administration, is currently achieving reductions in the primary expenditure of fuel, as well as in losses in electric power grids. The tight control has produced good results inasmuch as consumers are observing the limits established for them. There are, however, no small number of grievances concerning the extraordinary restrictive measures. Just what is the problem here?

The necessity and justification for distribution of electric power under the plan are well understood, as well as the penalties established by the plan for consumption in excess of that specified by approved standards and contractual agreements. An altogether different matter is causing the dissension--arbitrary restrictions not called for by plans or agreements.

What is this leading to?[in boldface]

Outwardly, power industry figures and statistical accounting data imply that enterprises are receiving fully as much power as they should. It would seem to be distributed evenly over the course of a month, ten-day periods, or even on a daily basis. Moreover, temporary restrictions, that is, reductions in power output--usually unexpected--unfortunately do not come to light because of the pleasing statistics.

What is it that takes place in those situations? Here are the conclusions of experts at the Bogoslovskiy aluminum plant: "During the unplanned-for restrictions and power outages, the thermal balance in the electrolyzers is drastically upset; they operate virtually within a freezing and heating cycle... These disturbances of the technological regime have led to a reduction in electrolyzer productivity, an increase in the cost of raw materials, and to an excess of power consumption." In this way, a power shutdown led, not to a savings, but to an overexpenditure of power.

Last year, there were several unplanned-for reductions in the power supply to the plant. In their efforts to restore normal operating conditions, the metallurgists consumed 65 million kilowatt-hours beyond the figure specified in the plan. At the Verkh-Isetskiy metallurgical plant, a single brief, unexpected outage cost the plant and its sub-contracting organizations 500 tons of transformer sheet steel.

Consumer complaints are, on the whole, quite modest. The exact information is systematically forwarded to the Sverdlovsk obkom heavy industry office specifically in charge of both energetics and metallurgy. The head of the office, A. Tkachenko, has this to say:

--The operational organization of "Sverdlovenergo" enterprises has markedly improved in the past few years. Within the oblast', measures are being adopted for the long-term activation and management of new power capacities. Unfortunately, it is difficult to achieve a constant and unconditional agreement between industry and power suppliers. In actuality, this is all determined by the consolidated dispatching control(ODU) of the USSR Ministry of Power and Electrification for the Urals, depending upon its economic capabilities at the time.

The head of the ODU, Ya. Makushkin, confirmed the fact that many complaints are justified, while for his own part recalling the energy-conservation shortcomings of a number of industrial consumers. Day-to-day control is based on routine instructions. The dispatcher is told not to shut off power to any of the consumers; this will be done as a matter of course by the automatic safeguard system.

And the unified All-Union "Rules for the Use of Electric and Thermal Power" act as a watchdog. Paragraph 70 in them forthrightly states: "For purposes of ensuring the stable operation of systems during situations calling for the enforcement of schedules for shutting off power to consumers." Paragraph 71 warns the willfully inclined: "The requirement of power supplying organizations regarding load reduction must be met by the consumer unconditionally and without delay..."

And the restrictions placed on one consumer or the other are, we repeat, explicable on a theoretical basis. Inherent in them is the essence of the standards, of production indicators for plans and contractual agreements, and of the distribution and consumption of power. The question is: when and how are restrictions to be placed? What is to be programmed into the automatic system? Is the field of energetics taking the path of least resistance, or is it in accord with the economic realities of the situation?

In search of mutually agreeable solutions[in boldface].

The complainants universally maintain that the dispatching control is resolving this highly complex problem by the simplest means available. Is not the aluminum plant an important consumer? Of course it is! But, from whose point of view, and to what extent? As far as the energy department is concerned, one power cutoff to the plant can have the same effect as cutting off dozens of others. Technology makes it possible to limit the plant to a single automatic metering device for monitoring power consumption, thereby eliminating the need to deal with a multitude of small consumers.

In reply, Ya. Makushkin and other energy officials put the blame on the territorial administrations, where, according to them, the distributional inadequacies of power production and supply originate, and on the need to impart flexibility to power capacity reserves. These problems must, of course, be resolved.

In addition, it would be advisable to become familiar with basic directives. Elementary cost-accounting should be performed which presumes the strict accountability of suppliers to consumers. Requirements with regard to an uninterrupted power supply are contained in the "Rules." They are, however, so diffuse that this very accountability is difficult to determine, or, in any case, is not easily correlated to consumer losses.

The Bogoslovskiy aluminum plant, which is primarily involved in this problem, for a long time did not receive any kind of compensation for interruptions of its service form "Sverdlovenergo." True--it was not fined for the power consumption excesses which became necessary. The two sides, as they say, came to a mutual agreement on a standard amount totaling several hundred thousand rubles. For the plant, this represented a net loss with the attendant consequences(not to mention the indirect losses). For "Sverlovenergo" the consumption excesses permitted by the consumer meant production figures surpassing those stipulated by the plan, while all attendant consequences in this case were, by contrast, quite pleasant.

Since last year, the additional power consumption has not been a cause for concern among Bogoslovskiy officials. The All-Union production association, "Soyuzalyuminiy," for the most part managed the problem internally in such a way as to increase its quota for power consumption. For their part, "Sverdlovenergo," and, of course, the ODU for the Urals, easily make do with an inflated plan. This departmental quiescence, however, comes at a very dear cost to the national economy.

Electric power production in our country is expanding with each year. In 1965, it totaled 507 billion kilowatt-hours, while in 1979, the figure grew to 1.239 trillion. Implementation of a vast program of power industry construction is under way. One notes the establishment on a continuing basis of the necessary means for satisfying the demands of the national economy for energy resources. Of course, this growth in electric power production demands a great deal of care with regard to its intelligent use and conservation. A new operational mechanism reveals a potential for dealing with this problem. It is important that the industrial ministries and departments, together with energy officials, find within the framework of the operational mechanism the means for more active control of the use of power resources, as well as their steady supply to consumers.

9481

CSO: 1822

ELECTRIC POWER

PROBLEM OF INVOLVING GEOTHERMAL ENERGY IN FUEL-ENERGY BALANCE

Yerevan KOMMUNIST in Russian 8 Jul 80 p 2

[Article by R. Malkhazyan, senior scientific associate, Armenian Scientific Research Institute for Energy, distinguished construction engineer of the Armenian SSR]

> [Text] It is incumbent upon us to give thought well in advance to future power construction, on which depends to a considerable extent the economic growth of the nation.
> --L.I. Brezhnev.

Over the course of many years, the hydroelectric power resources of the Armenian SSR have been the sole source of its electric power. Electric power construction in the republic has developed along principles of the GOELRO which deals with the complex usage of hydro power resources. Domestic thermoelectric power progress, specifically, the construction of thermoelectric power stations in Armenia during the last 17 years, has made it possible to make up for the depletion of hydroelectric power resources.

At the present time, the power system of the republic is predicated on a broad spectrum of electric power stations: steam, hydraulic, thermal, and atomic. The role of hydroelectric power resources in overall power consumption in Armenia is not significant at the present time.

Analysis of power resources confirms that power requirements will be supplied by fuel energy sources(coal, oil, gas, nuclear) and by hydro power up to the end of the 20th century. Consequently, power resources are confined to fossil and nuclear fuels, industrial reserves of which are not accessible to Armenia. Moreover, potential hydroelectric power resources, being economically unprofitable, are not commensurable with ever-expanding power consumption. This situation suggests the necessity for science and technology to take a new direction in the development of the republic's power resource base.

A timely solution to the energy problems of the future and the need to develop a long-term operational program for the use of new sources of energy, including geothermal, the importance of which was emphasized by comrade

L.I. Brezhnev in his address to the November(1979) CPSU CC Plenum, both take on particular significance for our republic, where power engineering is based primarily on scarce imported fossil and nuclear fuels.

At the same time, since it is an area of incipient volcanic activity, Armenia is regarded as one of the most promising regions of the country for the development of geothermal power. Centers of intense seismic and vulcanotectonic pressure, which characterize the Armenian uplands, cause the formation close to the surface of geologic zones of abnormally high thermal energy. These pressure points are considered to be geothermal energy sources which, in the long term, are seen as a productive basis for geothermal power development.

The strain on the long-range fuel-energy balance, caused by progressive exhaustion of both fossil fuel and hydroelectric power resources, has caused the need at present in approximately 60 different countries to spur research into the problems of developing renewable energy resources--solar, wind, and geothermal, as well as the power of ocean tides.

Until 1958, Italy had been the only country in which geothermal energy was employed for the production of electrical power. During the past 20 years or more, geothermal energy has seen development chiefly in a number of countries having regions of regular volcanic activity.

Put on-line in 1967, the Pauzhetskaya experimental-industrial automated geothermal electric power plant in Kamchatka was the first facility of its kind in the USSR. The successful operation of this plant has confirmed its competitiveness with classic methods of electric power production.

Sources of geothermal energy are manifested in two basic forms--hydrogeothermal, comprising an insignificant part of the overall geothermal energy resources, and petrogeothermal, which consist of energy accumulated in deep, "dry" rock masses. The general distribution of this type of heat energy has caused a problem in the development of petrogeothermal power. In the program of geothermal energy use, preference is given to heat energy accumulated in deep rock formations.

Given suitable conditions in the rock formations, geothermal systems provide a yield of "pure" energy which is two to five times more cost effective than the burning of scarce fossil fuels.

The virtual inexhaustability of geothermal energy resources, as well as its economic and ecological advantages over other energy sources present vast prospects for the creation and development of a fuel-energy base in the Armenian SSR, and the implication of a new type of energy in the fuel-energy balance of the republic.

Petrogeothermal resources--the heat of deep rock masses with varying temperature potentials which can be employed for economic purposes--are widely used for central heating and hot water supply to public-residential and industrial consumers, for heating commercial greenhouses and livestock complexes, for warm-water soil irrigation, and for electric power generation.

Armenia is a land of extinct volcanoes. The hundreds of surviving volcanic systems, though not having the "strength" for active erruptions, but, nonetheless bearing considerable heat energy in their cores, are a virtually inexhaustible source of energy.

According to the estimates of vulcanologists, at the end of the century, geothermal energy will be providing about 10 percent of all the energy available to mankind. This is an impressive figure.

In the European part of the USSR, geothermal sources have been identified which have parameters permitting their use within the foreseeable future for thermoelectric power supply. According to currently reliable data, the most promising areas are: Stavropol'skiy Kray, Transcarpathia, Dagestanskaya ASSR, Armenian SSR, Georgian SSR, and the Crimea. At the present time, preliminary studies are being made for future construction of large-capacity GeoTES's[geothermal power stations] in the first three areas cited above.

The research laboratory of geothermophysics of the Leningrad VNIMI[All-Union Scientific Research Mining Institute], in cooperation with associates of the Armenian NII for Power Engineering and the Geological Administration of Armenia, has conducted investigations which provided preliminary engineering and economic estimates confirming that the potential of the economically recoverable petrogeothermal resources in the territory of the Armenian SSR amounts to around 300 billion tons of conventional fuel. It would supply almost 80 percent of the requirements of the republic. This provides a basis for considering this vast energy potential a scientific-technical problem of immense national economic importance.

An urgent need has developed to begin wide-ranging operations to include geothermal energy in the fuel-energy balance of the republic. This requires the development and implementation of a regional long-term, broad-scale program of geologic-geothermal basic and applied research, as well as joint scientific-industrial and design-construction work on the development of man-made hydrogeotechnological circulation systems for extracting heat from deep rock layers and employing it for industrial purposes (before 1990). This would make it possible in the long term to complete the change-over from combustible fuels to hot water, while finishing preparations by the year 2000 for on-line activation of the first power unit of the high-capacity Armenian GeoTES.

The complexity of the problem will require the participation of all sectors of the national economy in attemrts to resolve it. Even as soon as this year it is necessary to follow through on efforts to establish and carefully develop a long-term program for the use of geothermal energy.

Scientifically-based prognostic appraisals made of geothermal energy resources could become the basis for the fabrication of a plan for the social-economic development of the republic in the 11th Five-Year Plan, and could be coordinated with succeeding stages in planning for the fuel-energy balance of the republic during the period 1990-2010.

The establishment and development of a long-term joint scientific-industrial program for the use of geothermal energy in the Armenian SSR would seem to be a task which should be assigned to the Academy of Sciences of the Armenian SSR jointly with the Gosplan, Minvuz, Geology Administration, and Armenian Main Power Administration. The participation of the appropriate scientific research and planning organizations in the republic would be sought, as well as the country's leading experts on geoenergetic problems----the Leningrad VNIMI and the Moscow Power Engineering Institute imeni Krzhizhanovskiy.

Currently, a number of scientific and planning organizations in the republic are conducting research on various problems in the field of power engineering, while institutions of higher education are preparing specialists in the classical disciplines of energetics and geology. This, however, is not enough.

Problems relative to the course of geothermal development should be included in the topical planning of organizations dealing with scientific research, geology, and power engineering, as well as appropriate departments of institutions of higher education within the republic. The creation within the republic of appropriate interdepartmental agencies to provide a unified methodical approach to, and regulation and coordination of, efforts to develop geothermal energy is absolutely essential.

The problem of involving geothermal energy in the fuel-energy balance of Armenia is not a concession to current fashion, but a vital necessity.

9481

CSO: 1822

ELECTRIC POWER

HIGH-VOLTAGE LINES UNDERGO A 'TEST-RUN'

Moscow MOSKOVSKAYA PRAVDA in Russian 8 Jul 80 p 2

[Article by L. Myslivtsev: "The High Tension of Belyy Rast"]

> [Text] Before electric power transmission lines are given their start in life, they undergo a "test-run" at an electric power testing station.

A person experiencing for the first time the electric power testing substation, Belyy Rast, outside of Moscow, finds himself absolutely perplexed. And not surprisingly. One is, afterall, immediately taken aback by the maze of steel-shielded conductors used in wondrous devices, insulators, transformers, converters, huge circuit breakers, and other large and small devices of exotic design. Is it possible, one wonders naively, that there could be any kind of purposiveness in this chaos? And, only after careful reflection does one come to understand that it is indeed possible: what is taking place here is systematic research in the development and perfection of new devices for the transmission of high-voltage electric power.

It was here that the powerful 750 kilovolt lines that later linked the Donbass with L'vov, and Moscow with Leningrad, underwent "undergraduate" final testing in the mid-sixties. Finally, LEP[electric power transmission lines] of the not-too-distant future, designed to carry an unprecedented amount of voltage--1.15 million volts--have already consumed five years of "test-running" at Belyy Rast.

When one is familiarized with the one-kilometer-long strip used for testing this transmission line, where many of the newest design concepts of Moscow scientists are put into practice, one sees at first hand just how grandiose, how complex is the effort to develop the VL-1150 kilovolt line. The difficulties inherent in this undertaking are so immense that one finds oneself reluctantly entertaining the question: is this effort justified? Does the need exist to develop "million-volt" lines?

--Yes, it does. In fact, it is not simply a need, but an inescapable necessity,--claims the director of the institute, "Energoset'proyekt," Lev

Leonidovich Peterson. --The point to remember is this: The power transmission systems of the Urals, Siberia, the Volga region, and the central regions of the European USSR possess a capacity of 500 kilovolts. Up to now, this has been sufficient for our needs. However, with the installation of more and more powerful stations having greatly increased electric-power handling capacity, the LEP-500 has become inadequate(even though its capacity is quite impressive--on the order of a million kilowatts). By employing a voltage twice as great, we will be able to increase five-fold the "passage" of electric-power capacities over the lines. This is why, despite large expenditures of materials and serious research difficulties, we are so intensively and persistently working on the development of extremely high voltages.

But the "difficulties"(rather, the complex scientific and technical problems) are not minor. Take conductors. Specifically, those which will be used to transmit power from about five GES's on the Dnepr River. The only possible way to implement the transmission of such colossal quantities of power is to employ extremely high voltages. But, such voltages, by creating a powerful electric field, cause the conductors to emit visible radiation. This is the so-called corona discharge. While it makes for a beautiful spectacle, there is a strict prohibition against "carrying" it on the VL-1150, inasmuch as the corona "sprays" energy uselessly into the atmosphere, and the conductors are thereby converted into powerful sources of radio interference.

It was necessary to achieve a complete understanding of the nature of the corona discharge phenomenon, to firmly ground it in theory, and to develop an apparatus which would permit direct measurement of the amount of energy in the lines being used.

Scientists at the high-voltage laboratory of the Institute of Power Engineering imeni G.M. Krzhizhanovskiy, in cooperation with specialists from the Long-Range Transmission Administration, set up and maintained such devices at the VL-1150 testing strip. They were able to reduce corona discharge. Their method called for splitting up the conductor. In each of three stages, bundles were fashioned consisting of eight conductors wound around a single central core by means of a specialized spreader. Suspended from 10-meter-long strands of insulators, they produced a fantastic effect. However, this effect is reversed by the test of harsh reality--heavy lengths of conductor are impractical for use in snow and freezing rain; they require stronger supports, and must be suspended at greater heights above ground. The fact is, consideration must be given to this high, but unavoidable, price to pay for "extremely-high" voltages.

The VL-1150 test plot is the prototype for future high-power lines which will connect the Central Region, including Moscow, with the distant eastern regions of the USSR.

Meanwhile, at Belyy Rast, scientists continue, as usual, to conduct testing. A solution is being developed to one of the important and essential problems connected with superhigh-tension lines carrying alternating current--the reduction of power losses (very heavy) during transmission. In addition to the VL-1150 transmission lines, design and manufacture of 1,500 kilovolt direct current line is underway.

During the 10th Five-Year Plan, construction was begun for installation of LEP-1500 employing direct current, Ekibastuz--Center, over an expanse of 2,400 kilometers. The test model of this run is now being "approved" at Belyy Rast. Right here, at Belyy Rast, on the power testing bench, experimental tests are being run on powerful equipment and devices for control and automation of future lines under actual conditions of their operation.

Soon, this LEP will also receive the "stamp of approval" from Belyy Rast.

9481

CSO: 1822

ELECTRIC POWER

BRIEFS

FUTURE GES SITE--Barnaul--In Gorno-Altayskaya Autonomous Oblast', the year of the convening of the 26th Party Congress will be marked by the start of construction on a hydroelectric power station on the river Katun'. Recently, the station's future directors, who bring to the project a great deal of experience in the building of electric power stations in eastern Kazakhstan, visited the new construction site. The administrative head of "Irtyshgesstroy" of the USSR Ministry of Power and Electrification, Yu. Panfilov, discussed forthcoming work: --A 180-meter dam will span the river at an angle. The GES dam operations building, as well as the floodgates used during construction and repair will be unique and will be designed with consideration for the peculiarities of the locale and the current level of hydrotechnological construction. The project calls for the use of new methods to be used in the installation of the dam. On the presently sparsely inhabited site, a city of about 25,000 people will eventually grow up. Construction cadres at the new hydrostation will pattern preparatory operations after the Shul'binskaya GES in Kazakhstan. [Text] [Moscow IZVESTIYA in Russian 28 Jun 80 p 3] 9481

CAUCASUS POWER LINES--Electric power transmission lines from Tviberi to Lakhamula, erected at an altitude of 2,000 meters above sea level, have gone into operation. This effects completion of work to switch all mountanous regions of Georgia into a single Caucasian power system. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 28, Jul 80 p 2] 9481

POWER FOR GES CONSTRUCTION--Ust'-Ilimsk, 9 Jun--One of the high-voltage lines of the Ust'-Ilimsk-Bratsk run has been rerouted to Krasnoyarskiy Kray to deliver power to the construction site of the Boguchanskaya GES on the Angara River. The little town of Sedanovo a decade and a half past was the support base for the courageous construction of the autoroute for the line from Bratsk to Ust'-Ilimsk, while several years ago, LEP installation workers of "Bratskgesstroy" were based here. They had the job of carving a path through the impassable taiga from Sedanovo to the Kodinskaya settlement and erecting a thousand support structures for the new lines while overcoming the hazards of taiga swamps and mountanous terrain. And, the power transmission lines were installed under constant voltage as well.

Power from the Ust'-Ilimskaya GES has begun to flow regularly to one of the construction sites. [Text] [Moscow PRAVDA in Russian 10 Jun 80 p 2] 9481

ENERGY CONFERENCE RECOMMENDATIONS--Irkutsk--From February to May, professional staffs in Irkutskaya Oblast' carried on a unilateral discussion of means for further wide-scale development of the productive powers of the region's economy during the 11th Five-Year Plan and for the future. The results of this discussion, as well as proposals and possible prospects for development of the sectors concerned were studied at a joint scientific--practical conference where recommendations were set forth. The recommendations gave particular attention to improving the structure of energy production. It was proposed, for example, that, because of the initiation of new power projects and the renovation and expansion of existing thermal electric stations, it would be possible to significantly increase established capacities during the forthcoming decade. Main heating networks, the construction of which received the strict attention of the conference, will allow an increase in the centralization of heat supply and the phasing out of electric power boiler systems, as well as a reduction in the expenditure of energy for heat production. Recommendations of the conference received the approval of the Irkutsk CPSU obkom bureau. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No. 26, Jun 80 p 16] 9481

ORDER OF LENIN AWARDED--Moscow, Kremlin, 11 Jul--Order of the Presidium of the Supreme Soviet of the USSR. With regard to the awarding of the Order of Lenin to comrade Neporozhniy, P.S.. For service to the Soviet state in the development of power engineering and national electrification and in connection with the 70th anniversary of his birth, the Order of Lenin is awarded to comrade Neporozhniy, Petr Stepanovich, minister of power and electrification of the USSR. Chairman of the Presidium of the Supreme Soviet of the USSR, L. Brezhnev. Secretary of the Presidium of the Supreme Soviet of the USSR, M. Georgadze. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Jul 80 p 1] 9481

CHERNOBYL'SKAYA AES SECOND PHASE--Ukrainian SSR--"Basic trends in the development of the USSR economy in 1976-1980" call for on-line activation of power capacities at the Chernobyl'skaya AES. During the 10th Five-Year Plan, the designed capacities of the two power blocks of the first phase were brought fully on line. Station personnel reached their 1979 objective well ahead of schedule. Currently, the cost of a single kilowatt-hour of electric power generated at the atomic station is the lowest among all stations having similar power blocks. Second phase installation operations are proceeding apace at the AES. Construction and installation engineers expect to deliver the third power block sometime this year. [Text] [Yerevan KOMMUNIST in Russian 21 Jun 80 p 1] 9481

POWER-LINE PROTECTION DEVICE--Pyatigorsk, Stavropol'skiy Kray, 22 Jun--The testing plant of "Soyuzenergoavtomatika," a production association of the

USSR Ministry of Power and Electrification has succeeded in producing new high-voltage devices. Used in conjunction with various power receiving units, they comprise an automatic circulatory discharge system. The system was devised by scientists of the Moscow division of the NII for Direct Current Research and the Institute of Electrodynamics of the Academy of Sciences of the Ukrainian SSR. The system is designed to ensure reliable operation of high-voltage line carrying from 110 to 750 kilovolts of alternating current. It prevents unexpected power outages, and warns against possible overloads, while providing a stable supply of electric power. The initial compliment of the devices has been dispatched for use with the LEP-750 Donbass--Al'bertirsha line, which connects the USSR with Hungary. [Text] [Moscow PRAVDA in Russian 23 Jun 80 p 2] 9481

EKIBASTUZ POWER COMPLEX--Pavlodarskaya Oblast' (TASS)--LEP-1150 lines carrying alternating current will improve the energy balance of the Urals and adjoining regions and save tens of millions of tons of high-grade coal each year from long-range rail shipment. At the lead end of the mainline between Ekibastuz and Kokchetav, the initial precast ferro-concrete foundations have been laid beneath the high steel support towers. This line, which has no analogs anywhere in the world, was designed to carry 1.15 million volts. It spans almost 1500 kilometers in a lattitudinal direction. The purpose of the mainline is to transport power generated by the Ekibastuz thermal stations, the first of which is already in operation, to the Urals. Use of the LEP-1150 line makes it possible to offset evening maximum loads in the power systems by transferring additional electric power from Ekibastuz, where it is night-time. Through implementation of a program to create a fuel-power complex at Ekibastuz, it is planned to erect a "fan" of power transmission lines of high and extremely high voltage from the complex to various regions of the country. The first 500-kilovolt "beams" have already connected it with western Siberia, Altayskiy Kray, central and eastern Kazakhstan, and the southern Urals. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 14 Jun 80 p 2] 9481

CSO: 1822

PROBLEMS OF PRODUCTION, USE OF FUEL AND ENERGY

Moscow POLITICHESKOYE SAMOOBRAZOVANIYE in Russian No 7, 28 Jul 80 pp 12-20

[Article by R. Leshchiner: "Fuel and Energy: Problems of Production and Utilization"]

[Text] In 1980 we mark the 60th anniversary of adoption of the GOELRO plan by the 8th All-Russian Congress of Soviets, a plan which V. I. Lenin called the party's second program. The Lenin formula "Communism equals Soviet power plus national electrification" defined exceptionally vividly that enormous role played by power engineering in development of the nation's economy and in building the material and technological foundation of communism. At all stages of economic development our party has devoted the closest attention to growth in fuel production, production of electric power and thermal energy. A large fuel-energy complex (TEK) has been established in this country during the years of Soviet rule -- an aggregate of interlinked branches and enterprises, which mine, produce, refine and process, transport and distribute all types of fuel-energy resources. In this general survey article we shall examine contemporary problems of production and utilization of fuel and energy in this country as well as paths of future development of the USSR TEK.

The Soviet Union today possesses an enormous, mighty fuel-energy complex. In 1980 our country will produce 606 million tons of crude oil and gas condensate, 435 billion cubic meters of natural gas, 745 million tons of coal, and 1,295 billion kilowatt hours of electricity. The energy needs of our nation's economy are supplied by several hundred oil and gas fields and coal mines, about 1,500 large power generating plants, and many thousands of boiler plants. The total length of main trunk crude oil pipelines in this country exceeds 60,000 kilometers, main natural gas pipelines -- approximately 120,000 km, and power transmission lines of 35 kilovolts and higher -- more than 700,000 km. It is important to note that the fuel-energy branches in the USSR produce a great deal for export -- primarily to the European socialist countries. In 1979 imports from the USSR covered approximately 25 percent of the total energy consumption of the other CEMA member nations, and 80 percent for crude oil.

The Soviet Union is the only one of the world's developed countries which fully meets its own energy requirements with its own resources and own production. Development of the TEK, however, on a scale corresponding to the requirements of all other branches, sectors and foreign trade requires considerable expenditures in the national economy. The percentage share of the fuel-energy complex in the total value of USSR fixed industrial productive assets and in total capital investment in industry is approaching 30 percent. A total of 65 percent of the pipe produced in this country and 20 percent of other ferrous metallurgical output, and approximately one sixth of copper, aluminum, cement and machinery production goes directly or indirectly into growth and development of the TEK. Incidentally, closely linked with this is the task of choosing the most efficient ways to increase the production capacity of the power and energy base of our nation's economy.

There were two stages in development of the USSR fuel-energy complex prior to the beginning of the 10th Five-Year Plan. During the first of these stages -- from the GOELRO plan to the mid-1950's -- the TEK was based primarily on coal mining. Approximately a quarter of a century ago the fuel-energy complex entered the second stage of its development -- a period of accelerated growth of production of the most efficient types of fuel: oil and natural gas. This led to major structural changes in the fuel-energy balance (see table), and particularly to a substantial decline of the percentage share of coal in this balance.

Dynamics of Fuel Production Structure (as percentage of total)

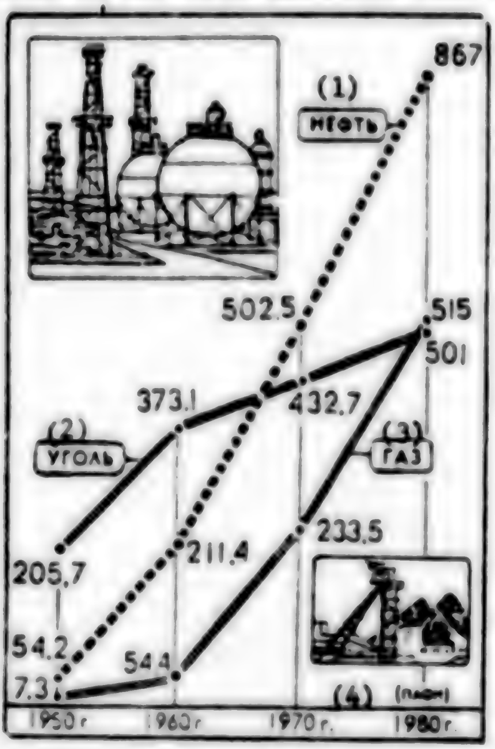
Years	Crude Oil and Gas Condensate	Natural Gas	Coal	Peat	Fuel Shale	Wood
1940 . . .	[illegible]	1.8	59.1	5.7	0.3	14.4
1950 . . .	17.4	2.3	66.1	4.8	0.4	9.0
1955 . . .	21.1	2.4	64.8	3.3	0.7	6.7
1960 . . .	[illegible]	7.9	53.9	2.9	0.7	4.1
1965 . . .	35.6	15.5	42.7	1.7	0.6	3.5
1970 . . .	[illegible]	19.1	[illegible]	1.5	[illegible]	2.2
1975 . . .	[illegible]	[illegible]	[illegible]	1.2	[illegible]	1.6
1976 . . .	[illegible]	23.1	29.0	0.7	0.7	1.5
1977 . . .	[illegible]	[illegible]	28.2	0.6	0.7	1.4
1978 . . .	45.7	24.6	27.2	0.5	0.6	1.4

Accelerated growth in production of oil and gas produced considerable economic effect. Over a period of 20 years (1955 through 1975) utilization of natural gas alone produced savings of 20 billion rubles in capital spending and made it possible conditionally to eliminate not less than 800,000 full-time jobs.

Change in the structure of the fuel balance was taking place simultaneously with rapid growth and development of the power industry, based on construction of the world's largest thermal electric and hydroelectric power stations. Technical retooling of production was achieved at thermal electric power stations, generating approximately 85 percent of the electricity produced in the USSR, on the basis of installation of large-output generating units (up to 800,000 kilowatts). At the present time such large generating units account for almost 80 percent of installed generating capacity at thermal electric power stations in the USSR. Based on technological advances in electric power engineering, production of electricity in this country has more than quadrupled in the last 20 years (from 292 to almost 1,300 billion kilowatt hours), while specific consumption of standard fuel per kilowatt hour of electricity delivered to the customer has decreased by almost 140 grams. The fuel savings in the nation's economy due to this factor total approximately 235 million tons of standard fuel per year at the present level of generation of electric power, a figure which exceeds the total annual production of such coal basins as the Donetsk, Karaganda, and Moscow.

Growth in production of electric power has made it possible to boost the power-worker ratio. In industry it has increased from 13,000 kilowatt hours per man per year in 1960 to 31,900 in 1975, including an electric power per worker increase from 10,500 to 23,900 kilowatt hours per man per year. In agriculture the power-worker ratio in 1960 was 5.4 horsepower from all energy sources, while in 1975 the figure was 17 horsepower. This has made it possible to eliminate a substantial number of jobs and to boost the level of mechanization of production processes.

Fuel Production Growth in the USSR (million tons of standard fuel)



Key to figure on preceding page:

1. Oil	3. Gas
2. Coal	4. Plan

Growth and development of the electric power industry and increase in production of progressive types of fuel produces not only economic but social effect as well. The role of electrification in improving working and living conditions, for example, is well known. Employment of electric power in industrial processes promotes more efficient utilization of materials, reduction in waste, and thus improved environmental protection. Electrification of transportation is also of great ecological significance.

Priority growth in oil and gas production, which characterizes the second stage of development of the TEK of the USSR, had a positive influence on the dynamics of efficiency of societal production. A new, third stage in growth and development of the fuel-energy complex of the USSR began in the mid-1970's, a stage at which problems of energy supply to the nation's economy must be resolved taking into account a number of new factors which many times adversely affect economic effectiveness indices.

The increasing complexity of the problem of meeting our country's needs in fuel-energy resources at the present stage is connected first and foremost with the specific features of distribution of natural fuel and energy resources within the USSR. Approximately 90 percent of all potential mineral fuel and hydroelectric power resources are located east of the Urals, while approximately 80 percent of total energy consumption occurs in the European areas of the USSR (including the Urals). Under these conditions, the steadily growing demand for fuel and energy must be met by tapping increasingly more remote sources of energy. Natural gas production in the fields of the Volga, Ukraine, and Northern Caucasus reached a maximum by about 1965. Subsequent natural gas production growth was produced by the fields of Central Asia, and subsequently Siberia as well. This resulted in an increase in natural gas transport distance and a decline in the technical-economic indices of the gas industry, although even today gas as a fuel remains much more economical than coal. The fields which are currently being developed, particularly the Urengoy field, the world's largest, are distinguished by exceptionally low gas production costs, but they require the construction of costly, extremely long-distance natural gas pipelines.

Production cost is also rising in the oil industry in connection with development since the mid-1960's of the resources of Western Siberia, which are further from points of consumption than the Volga-Ural oil province -- the production region in 1955-1965. Exploitation of the oil wells of Western Siberia, especially the famed Samotlor field, was of exceptional importance for growth and development of our petroluem industry and for increasing on this basis the overall efficiency of the TEK. However, as was noted at the December (1977) CPSU Central Committee Plenum, the first stage in formation of the Western Siberian Oil Complex has come to an end.

The most economical fields -- Samotlor and Ust'-Balykskoye -- have reached peak production. In the near future, as calculations indicate, equal production growth will require three times the volume of drilling, in connection with a move to the less rich Var'yeganskoye, Fedorovskoye, Kholmogorskoye and other fields. As a consequence of change in the geography of gas and oil production and increasing complexity of geologic conditions, specific capital investment to achieve an additional ton of crude production increased by 20 percent just in the Ninth Five-Year Plan, with a 25 percent increase to produce an additional cubic meter of gas.

Tapping the fuel-energy resources of the eastern regions is leading to a steady increase in volume of transport to the European part of the USSR. In 1970 130 million tons of standard fuel were delivered to the European part of the country and to the Urals, while in 1975 the figure was 361 million tons. In 1980 approximately 700 million tons of standard fuel will be transported from our country's eastern regions, including approximately 240 million tons of crude oil, 120 million tons of coal, and 220 billion cubic meters of natural gas. The average transport distance for all types of fuel, which increased from 734 km in 1960 to 839 km in 1970, will increase to 1,243 kilometers according to the 1980 plan.

All these factors affect the capital-intensiveness of the TEK -- it increased from 4.05 rubles per ruble of output in 1961-1965 to 4.74 rubles in 1971-1975, and it is continuing to rise. An increase in the cost per unit of generating capacity in the power industry is connected with the increasing cost of equipment and construction. Up to approximately the mid-1970's this increase in specific capital spending was compensated by fuel economy at power generating plants. At the present time, however, in spite of the fact that thermal eletric generating plants are moving to higher steam parameters, the rate of decline in specific fuel consumption to produce electricity has sharply slowed. Under these conditions fuel savings no longer compensate for increase in specific capital investment, and there is noted a trend toward a worsening of the technical-economic indices of electric power generation, particularly the capital-output ratio.

A scientifically-substantiated national energy program is currently being drafted in this country. Its goal is to ensure priority growth and development of the power industry and on this basis improvement of the entire technological foundation of the economy. The heart of this program is an increase in the output capacity of the fuel-energy complex, at the same time with a further improvement in its structure.

The main directions to take in accomplishing this task in the forthcoming decade were specified in Comrade L. I. Brezhnev's address at the November (1979) CPSU Central Committee Plenum. Noting that the growing requirements of the economy are being met with difficulty, he called upon us to think through again and again the entire aggregate of energy problems. Applicable to the 1980's, stressed Comrade L. I. Brezhnev, the task consists in substantially improving the fuel-energy balance, and in particular reducing the percentage share of oil as a fuel for power generating plants. "To achieve this it is essential first of all to proceed even more resolutely in the direction of increasing the pace of natural gas production, especially in Western Siberia, and to secure a large-scale replacement of fuel oil with natural gas. Secondly, it is necessary to proceed more rapidly with growth and development of nuclear power engineering.... Third, it is necessary to speed up development of the Ekibastuz, Kansk-Achinsk, and Kuznetsk Fuel-Energy Complexes...."

In recent years we have had a steady growth in the percentage share of fuel oil to fuel thermal electric power plants. It increased from 11.9 percent in 1965 to 27.1 percent in 1975, and will increase to 29.3 percent according to the 1980 plan. And yet, as noted above, the technical-economic conditions of crude oil production have substantially worsened during this time. This trend will continue in the immediate future. It is also necessary to take into account the growing export value of crude oil and refined petroleum products. Therefore in the present situation it is inexpedient to continue in the future increasing the utilization of fuel oil at thermal electric power plants, especially at large GRES.

Under present-day conditions it is more advantageous to employ natural gas as fuel at thermal electric power stations. This is due primarily to the fact that the USSR possesses the world's largest natural gas reserves, in Western Siberia. They are estimated at tens of trillions of cubic meters and are concentrated in fields of unique size -- the Urengoy, Medvezh'ye, Tazovskoye, and others. This makes it possible to set up huge gas field production operations and natural gas pipelines of unprecedented transmissive capacity for transporting fuel to the Urals, the European part of the USSR, and abroad. A significant portion of the gas can be utilized locally. There are unlimited possibilities for building new gas-fired thermal electric power stations right in Western Siberia, including facilities fired by oilfield casinghead gas. The first of these facilities -- the Surgut GRES -- is already in operation.

So-called low-pressure gas, which remains in the formation after the bulk of the reserves have been produced and transmitted by pipeline to the customers, is a highly promising fuel for power stations sited in gas production areas. According to calculations, low-pressure gas resources are sufficient to operate large power generating plants in the northern part of Tyumenskaya Oblast for many decades into the future.

Nuclear power engineering is to play a very important role in the European regions of the USSR (and in the Urals as well beginning at the end of the 1980's). An extensive program of building nuclear power generating plants is currently under way in this country, completion of which will make it possible to increase severalfold the percentage share of nuclear power in the overall electric power balance (from approximately 3 percent at present to almost 15 percent). In 1980 alone production of electricity at nuclear power plants will increase by 33 percent. All nuclear generating plants currently under construction and on the drawing boards are located in the central and western regions, which lack local large sources of efficient organic fuel. Growth of nuclear power will make it possible to achieve a relative reduction in transporting to the European part of the USSR fuel from distant sources and will ease the fuel balance in this region. In addition it is very important that nuclear power plants, in contrast to fossil-fuel, do not pollute the atmosphere. This plays a particularly important role in densely-populated regions.

Of great important is an increase in coal's share in the power generating plant fuel balance. As we know, power generating plants of 4 million kilowatts are presently under construction in the Ekibastuz coal basin, and even larger plants in the Kansk-Achinsk basin. Construction of such plants will continue in the 11th and 12th five-year plans. At the same time it will be necessary to construct high-capacity power transmission lines to carry power to Siberia, Kazakhstan, the Urals, and the European part of the USSR. Expanded production of electric power at plants fired by Ekibastuz and Kansk-Achinsk coal will signify gradual removal of high-quality Kuznetsk coal from the fuel balance of the thermal electric power stations of the East. Correspondingly there will be an increase in capability to transport and utilize this economical coal in the European regions of the USSR.

When examining the development prospects of the coal industry, one should not ignore the fact that at the present time this branch is in difficult straits. In 1979 coal production in the USSR was somewhat down from the 1978 figure (719 million tons as compared with 724 million), while production in the first quarter of 1980 was below that in the first quarter of 1979. The main reason for this is the fact that the coal industry is the oldest fuel branch, containing considerable physically depreciated fixed assets. Therefore the bulk of capital spending channeled into development of this branch goes for maintaining the attained production level, and is not spent on increasing it. Problems of improving underground mine construction are very critical in this branch. At many mines there is a disproportion between preparatory work to establish new production sections and work involving coal production from existing faces. There are also a number of unresolved problems in development of coal machine-building, in putting new equipment into production, and in manufacture of spare parts for this equipment. It will also be necessary to study and adopt in a more purposeful manner the experience and know-how of the leading miner work forces, particularly those brigades which produce 1,000 tons of coal or more per day on modern equipment. Improvement in the organizational and technical-economic level of operations of coal industry enterprises and construction projects constitutes a basic factor in overcoming the current backwardness of this branch.

Performance of tasks in the area of growth and development of the energy base, as specified at the November (1979) CPSU Central Committee Plenum, will lead to further improvement in the structure of the fuel-energy balance of the USSR: the percentage share of gas and nuclear power will increase, while the percentage share of coal will stabilize, and subsequently may possibly increase somewhat. At the same time the percentage share of oil will stop rising, and perhaps will even decline, although absolute oil production figures will of course continue growing. Structural changes of this type will make it possible to maintain economy of the TEK at a level which will enable us to avoid an excessively tight capital spending balance for the national economy as a whole, and at the same time will ensure satisfaction both of domestic needs and our export obligations, particularly as regards the CEMA member nations.

Under conditions of a tight fuel-energy balance, economical consumption of fuel and energy becomes increasingly important each year. In his address at the November (1979) CPSU Central Committee Plenum, Comprade L. I. Brezhnev emphasized: "...Regardless of the pace at which we develop the power industry, conservation of heat and power will continue in the future to be a most important task for the nation as a whole. Therefore it is essential to incorporate into plans increasing targets pertaining to replacing obsolete, excessive energy-requirements equipment, acceleration of technological advances and extensive adoption of energy-conserving technology, and improvement in the heat-retaining ability of industrial structures and dwellings. The efforts of each and every work force, each and every worker should be focused on achieving fuel and energy savings."

With the present scale of production of fuel and energy resources, the importance of each and every percentage point of economizing is steadily growing -- from 7 million tons of standard fuel per year at the beginning of the 1960's to approximately 20 million tons in 1980. Therefore the comprehensive program to economize and increase efficiency of utilization of fuel and energy resources serves as an inseparable component part of the overall long-range power industry development plan in this country. Such a program is being drafted at the All-Union Scientific Research Institute of Combined Fuel and Energy Problems (VNIIKTEP) of USSR Gosplan. It incorporates the basic principles of a combined approach to achieving savings in fuel and energy resources formulated in the CPSU Central Committee decrees entitled "On Organizational and Political Work by the Kemerovskaya Oblast CPSU Committee on Achieving Savings in Fuel and Energy Resources at Enterprises and Construction Projects in this Oblast" and "On Work by the Pavlodarskaya Oblast Party Organization to Carry Out CPSU Central Committee Decrees on Achieving Savings in Fuel and Energy Resources at Enterprises and Construction Projects." The aim is to determine more fully and comprehensively reserve potential for achieving fuel and energy savings in the nation's economy, to maintain rigorous record keeping and rigid monitoring of their consumption, and to utilize in an interlinked manner all factors for achieving savings -- technical, economic, and organizational.

There is considerable potential for achieving savings in fuel-energy resources in all branches of the economy. At the present time the ratio of usefully-consumed energy to all energy encompassed in expended natural resources, for the USSR economy as a whole, is only slightly more than 40 percent. According to some estimates, in the majority of energy-consuming processes actual resource utilization indices (taking all losses into account) are 20-40 percent below those which could be achieved by replacing obsolete equipment presently in operation with more modern equipment and by observing all fuel and energy consumption standards and regulations.

An estimate of reserve potential for achieving savings in fuel and energy resources in the nation's economy should consider not only the level of their utilization but also the branch structure of fuel and energy consumption. It is obvious that the greatest possibilities for conserving energy resources are to be found in those branches with the highest energy consumption. At the same time one should not ignore those areas of production where energy consumption volume is low but where the level of economy of energy utilization is low and where realistic possibilities of improving conservation exist.

Industry consumes the most fuel -- 62 percent of total consumption, including approximately 75 percent of boiler-furnace fuel. It is also precisely industry which contains the greatest reserve potential for achieving savings in fuel and energy resources. But this reserve potential is being inadequately utilized. Many industrial ministries are still failing to devote adequate attention to this problem. The majority of industrial enterprises are not even drawing up fuel and energy economy plans. For example, out of 67 enterprises of the USSR Ministry of the Automotive Industry surveyed in 1978 by Gosenergonadzor officials, only two -- State Bearing Plant 3 and State Bearing Plant 4 -- had drawn up five-year plans of measures to economize in energy resources. In USSR industry as a whole slightly more than 40 percent of enterprises are participating in socialist competition to improve energy economy indices.

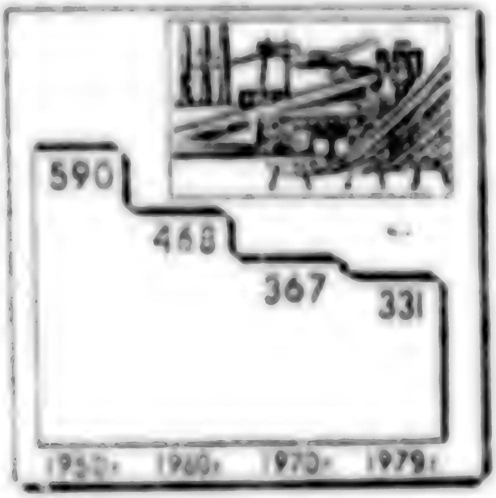
During the years of the Ninth Five-Year Plan a total of 130 million tons of standard fuel were saved in the Soviet economy in comparison with 1970 standard figures. According to the target for the 10th Five-Year Plan, 160 million tons are to be saved, but savings for the first three years totaled only 86.4 million tons -- less than planned. This fact attests to the necessity of sharply increased attention to matters of economizing in fuel and energy. One should bear in mind thereby that expenditures on savings in fuel and energy resources are 33 to 50 percent below expenditures on corresponding production, processing and transport increase.

According to present estimates, approximately 70 percent of all possible fuel and energy savings in the future will be obtained from technological advances in the area of production and consumption of energy resources, which presupposes development and utilization of new, more economical energy-consuming equipment, adoption of less energy-intensive technologies, and extensive employment of automatic control and monitoring devices. Approximately 20 percent of future savings can be achieved on the basis of improving insulation of buildings, reducing heat losses during storage and transport, and reducing losses of electric power and thermal energy during transmission. Purely organizational measures can achieve the remaining 10 percent savings.

At the present stage of development of our economy it is essential, as the party requests, to make a sharp turnaround to accelerated development of energy-conserving equipment and processes and energy-economical production trends in all branches and sectors. Improvement in utilization of fuel and energy resources is correctly viewed as an intersectorial problem, which should be given organized intersectorial support -- scientific-technical, material-technical, organizational, and economic.

Machine building should play the main role in technological progress here. In order to ensure a sufficiently rapid shift to energy-economical management in all the principal branches of industry, in transportation and in the home, we must solve a large number of problems pertaining to expanding the scale of manufacture of new and more efficient energy-utilizing equipment (furnaces, gas-burner devices), which is presently in short supply, increased manufacture of devices to utilize secondary energy resources, as well as test equipment, means of automating energy utilization processes, valve and control fittings for heat distribution networks, etc.

Decreasing Specific Heat Consumption at Public-Use Power Generating Plants (grams per kilowatt hour of delivered electricity)



In construction and the building materials industry it is necessary to revise the very approach to building design, to develop new methods and schemes of insulating dwellings and industrial structures, and to organize the manufacture of insulated panels and insulating materials. In housing and municipal utilities it is necessary to ensure optimal development of heat-supplying systems (boiler facilities, heat distribution networks), in order to eliminate overconsumption of gas and electricity for heating needs.

Growth in production of energy-conserving equipment should be combined with implementation of measures of an organizational nature. As is indicated by practical experience, many of these measures make it possible to achieve considerable savings in energy resources without substantial capital spending. These include first and foremost improvement in organization of energy supply at the scale of the enterprise, branch or territory, and selection of efficient arrangements of energy supply and operating conditions for energy-consuming installations.

More than 8,500 organizational-technical measures to achieve savings in fuel and energy resources have been carried out in Saratovskaya Oblast since the beginning of the 10th Five-Year Plan. As a result of a thorough analysis at industrial enterprises, approximately 3,200 sources of inefficient energy consumption were discovered and corrected. In less than 4 years a total of 534 million kilowatt hours of electricity and 885,000 gigacalories of heat were saved on this basis. Monitoring of consumption of energy resources within established standards and limits has been stepped up in this oblast. There is daily monitoring of consumed energy, and even hourly monitoring at half of all power generating plants.

At the Bashneftekhimzavody Production Association losses for organizational reasons accounted for up to 35 percent of total losses. Competition under the slogan "An efficiency certificate for every installation" was begun with the aim of eliminating these losses. Alongside other indices these certificates, which are now maintained at seven plants of the association, indicate consumption of electricity, steam and water in comparison with design figures and optimal parameters achieved on equipment of the same type at the USSR Ministry of Petroleum Refining and Petrochemical Industry. Thus there is ensured continuous monitoring of equipment operation.

Extensive socialist competition for achieving savings in fuel and energy resources is of the greatest importance. The Central Committee and oblast committees of the Communist Party of Belorussia devote considerable attention to organization of such competition. In the first four years of the 10th Five-Year Plan the republic's toilers saved 2.3 billion kilowatt hours of electricity, 5.6 million gigacalories of heat, and 883,000 tons of standard fuel. A total of 88.8 million kilowatts hours of electricity was saved in 1979 in Mogilevskaya Oblast alone.

One important problem is further optimization of energy consumption within the framework of specific territories. As we know, at the present time funds for energy resources are allocated to ministries, each of which distributes them among subordinate enterprises. Correspondingly the enterprises substantiate their requirements in fuel by types and grades only "vertically" -- without considering possibilities of utilization of secondary energy resources in the given area, centralization of heat supply, etc. Naturally under these conditions problems of selecting energy carriers for different plants and processes cannot be efficiently resolved, and the entire consumption side of the area's (and country's as well) fuel-energy balance is far from optimal.

The objective necessity of territorial management of making energy utilization more efficient is becoming increasingly more obvious each year. Much attention is devoted to this problem by oblast party organizations. The forms taken by their work in this area are quite diversified. The Sverdlovskaya Oblast CPSU Committee, for example, decided to draw up specific programs for the draft 11th Five-Year Plan, and one of these programs is "Optimization of the Fuel and Energy Balance, Efficient Utilization of and Economizing in Fuel and Energy Resources." In Saratovskaya Oblast all matters pertaining to increasing efficiency of utilization of fuel and energy resources are coordinated by a commission of the CPSU oblast committee. Comprehensive plans of corresponding measures on an oblast scale have been drawn up under its supervision.

The considerable work being done in this area by a number of oblast and republic party organizations cannot and should not replace the activities of appropriate government administrative agencies which would specially deal with problems of territorial optimization of energy consumption. But at the present time no such agencies exist. There is obviously a need for greater consideration of territorial facts than at the present time in management of the national economy's energy supply.

Improved efficiency of our fuel and energy complex can be achieved only on the basis of implementation of a system of scientifically substantiated measures aimed both at improving the structure of energy consumption and at creating conditions for efficient, thrifty consumption of all types of resources. Among these measures, alongside technical and organizational, an important place is occupied by measures to foster improvement in providing economic incentive to work forces and individual workers seeking to achieve savings in fuel and electricity, as well as to promote improved norm-setting and pricing.

Of enormous importance is instilling in each and every worker a feeling of proprietorship of the country, a thrifty attitude toward expenditure of all resources, including such short-supply resources as fuels and energy. This is an important task of enterprise party organizations, which are called upon extensively to utilize all means for this purpose, and particularly the system of political indoctrination and economic education of workers. In seminars and other forms of political and economic schooling it is desirable to devote greater attention to publicizing party decisions on matters pertaining to achieving savings in fuel and energy resources and to focus enrollees toward elucidating concrete reserve potential for reducing consumption of fuel and energy resources at work stations. Tasks connected with development of the fuel and energy complex can be accomplished most successfully through the joint efforts of economic agencies, party, trade union and other public organizations.

COPYRIGHT: Izdatel'stvo "Pravda", "Politicheskoye samoobrazovaniye", 1980

3024
CSO: 1822

INCREASING ROLE OF GAS INDUSTRY

Moscow SOBRANIYE POSTANOVLENIY PRAVITEL'STVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK in Russian No 14, 1980 pp 339-348

[Officially signed decree of the USSR Council of Ministers: "95. Increasing the Role of the Gas Industry Ministry in Implementing the State Gas Inspectorate"]

[Text] The USSR Council of Ministers decrees:

1. The Gas Industry Ministry is assigned the responsibility for:

implementing state inspection of adherence by construction and installation organizations constructing for this Ministry facilities for the production, transport and storage of gas with respect to the norms and rules applicable in the construction of these facilities insofar as ensuring their reliable and safe operation and also for the implementing by enterprises, combines, establishments and organizations conducting work in places where main gas pipelines are being laid, to be operated by the Ministry, the requirements imposed in the Rules for Safeguarding Main Pipelines;

formulating, with the participation of interested ministries and departments, and approval of unified rules for the use of gas in the national economy.

2. For the purposes of ensuring monitoring of the rational and effective use of gas the Gas Industry Ministry in implementing the State Gas Inspectorate in the USSR shall:

present to the USSR Gosplan its conclusions concerning problems relating to the approval of gas as the principal type of fuel for enterprises to be constructed, expanded and reconstructed or for individual gas-using plants and on the need of establishing reserve types of fuel for them;

give permission for the use of new gas-using equipment in the reconstructing or technical re-equipping of gas-using enterprises or individual gas-using plants;

introduce to the corresponding planning agencies, ministries and departments proposals on the broadening of production of progressive types of gas-using equipment ensuring a decrease in the specific gas consumption norms;

check, in collaboration with the USSR State Committee on Standards, to see that the gas-using equipment used corresponds to the requirements of rational and effective gas use;

require from the corresponding ministries and departments that uneconomical gas-using equipment be removed from production;

change, for the purpose of ensuring a normal gas supply to the population and for preventing disruption of the technological regime for operation of main gas lines, the norm for the daily supply of gas to gas-consuming enterprises, combines, institutions and organizations with mandatory prenotification;

examine the schedules, presented for coordination by the Councils of Ministers of the union and autonomous republics, executive committees of kray, oblast, Moscow and Leningrad city Soviets of People's Deputies, for the supplying of users with gas and the sequence for cutting them off from gas networks in the event of disruption of the technological regime of operation of main gas lines as a result of damage, as well as schedules for the shifting of gas-using enterprises, combines, institutions and organizations to reserve types of fuel when there is a considerable cooling;

consider the coordinated norms and rules for gas use presented by the ministries and departments;

involve, by agreement with the ministries and departments, their subordinate scientific research, design, planning-design and technological organizations in the formulation of gas use norms and rules;

generalize and disseminate the positive experience of gas-consuming enterprises, combines, institutions and organizations in the saving of gas, and also pose questions relating to the elimination of shortcomings in gas use before the ministries and departments.

3. It is ordered that the state acceptance commissions approving the operation of facilities under the control of agencies of the State Gas Inspectorate include representatives of these agencies.

4. The proposal of the Gas Industry Ministry on the transformation of the Administration of the State Gas Inspectorate in the USSR of this Ministry into the Main Administration of the State Gas Inspectorate in the USSR is adopted.

5. The appended Regulations on the State Gas Inspectorate in the USSR are approved.

6. The Gas Industry Ministry each year is allowed to allocate from the central material approval fund of the Ministry a sum up to 5% of the annual wages (base pay) of workers of territorial inspectorates (divisions) supervising the use of gas in the national economy and regional offices for supervision of construction and operation of facilities for the production, transport and storage of gas of the Main Administration of the State Gas Inspectorate in the USSR for presentation of awards to the most distinguished workers at these inspectorates (divisions) achieving positive results in the task of rational and effective use of gas at the facilities under their control and also increasing the reliability and safety of operation of facilities for the production, transport and storage of gas under departmental administration.

7. There is agreement with the proposal of the Gas Industry Ministry that there should be administrative responsibility of functionaries of enterprises, combines, institutions and organizations for violation of the norms and rules for use of gas as a fuel and raw material.

The draft of a decree on this problem should be submitted to the Presidium USSR Supreme Soviet.

8. USSR ministries and departments and the Councils of Ministers of the union republics should take measures for supplying operating gas-using plants at enterprises, combines, institutions and organizations under departmental control with instruments for registering gas consumption and for heat engineering monitoring, means for automatic regulation of gas consumption processes and heat utilization equipment ensuring rational and efficient gas utilization.

The USSR Gosplan, the USSR Gossnab (State Committee of the USSR Council of Ministers for the Materiel Supply of the National Economy) and the corresponding production ministries in their plans should provide for the production of these instruments, automated systems and equipment in the quantity necessary for meeting the needs of gas-consuming enterprises, combines, institutions and organizations.

9. In connection with adoption of this decree:

a) in the Regulations on the Gas Industry Ministry approved by a decree of the USSR Council of Ministers, dated 8 May 1973, No 298 (SP SSSR, No 11, p 57, 1973):

the last paragraph of point 2 should be revised as follows:

"assurance of state supervision over the rational and efficient use of gas in the national economy as a fuel and raw material";

subpoint "o" in point 6 should be written in the following revision:

"o) ensures the rational use of gas in the national economy; develops and introduces measures for the more effective use of gas; exercises state supervision over the rational and efficient use of gas as a fuel and raw material at enterprises, combines, institutions and organizations regardless of their departmental affiliation, over the introduction of new technology in the field of gas use in the national economy; over adherence by construction-installation organizations constructing facilities for the production, transport and storage of gas for the Gas Industry Ministry to the norms and rules applicable in the construction of these facilities with respect to ensuring reliable and safe operation of these facilities, over adherence to the requirements of the Rules for Safeguarding Main Pipelines by enterprises, combines, institutions and organizations carrying out work in areas where main pipelines operated by the Ministry are being laid down";

b) the following are no longer in effect:

decree of the USSR Council of Ministers dated 15 August 1958, No 918, "On Organization of a Gas Inspectorate in the USSR Glavgaz (Main Administration of the Gas Industry) system;

point 15 in the decree of the USSR Council of Ministers dated 21 May 1969, No 360, "On Measures for Supplying Gas to the National Economy During the Autumn-Winter Period 1969/70, Increasing Gas Production and Improving its Transport in 1970";

decree of the USSR Council of Ministers dated 8 April 1970, No 243, "On the State Gas Inspectorate in the USSR" (SP SSSR, No 6, p 45, 1970).

A. Kosygin, Chairman USSR Council
of Ministers

M. Smirtyukov, Business Manager
USSR Council of Ministers

Moscow, Kremlin, 11 April 1980, No 297

Approved by Decree of the USSR
Council of Ministers dated 11
April 1980, No 297

Regulations On the State Gas Inspectorate In the USSR

1. The State Gas Inspectorate in the USSR is responsible for ensuring the rational and efficient use of gas in the national economy, increasing national discipline in the field of gas consumption in the country, and also ensuring reliability and safety of operation of facilities for the production, transport and storage of gas.

2. The State Gas Inspectorate in the USSR functions through the Main Administration of the State Gas Inspectorate in the USSR of the Gas Industry Ministry and the local agencies subordinate to this Main Administration -- the territorial inspectorates (divisions) for supervision of use of gas in the national economy and regional inspectorates for supervision of construction and operation of facilities for the production, transport and storage of gas.

3. The Head of the Main Administration of the State Gas Inspectorate in the USSR is by virtue of this position simultaneously the Chief State Inspector of the USSR Gas Inspectorate and his deputies are simultaneously deputies of the Chief State Inspector of the USSR Gas Inspectorate.

The heads of divisions, the main specialists and chief engineers of the Main Administration of the State Gas Inspectorate in the USSR, the heads of the territorial inspectorates (divisions) for supervision of the use of gas in the national economy and their deputies and the heads of regional inspectorates for supervision of the construction and operation of facilities for the production, transport and storage of gas and their deputies, and also the heads of divisions and the chief inspectors of these inspectorates are the Senior State Inspectors in the Gas Inspectorate.

The senior engineers of the Main Administration of the State Gas Inspectorate in the USSR, sector inspectors, senior engineers, regional engineers and engineers of the territorial inspectorates (divisions) for supervision of use of gas in the national economy and regional inspectorates for supervision of construction and operation of facilities for the production, transport and storage of gas are state inspectors for the Gas Inspectorate.

4. The principal task of the State Gas Inspectorate in the USSR is exerting control over:

rational and efficient use of gas as a fuel and raw material at enterprises, combines, institutions and organizations, regardless of their departmental affiliation (henceforth called "gas-using" enterprises"); use of the funds allocated to gas-using enterprises for gas and adherence to the gas consumption regimes established for them; adherence to the order of delivery of gas to users; degree of preparation of the gas-using enterprises for operation on the reserve types of fuel stipulated for them; the technical level and condition of the gas-using plants and equipment with respect to ensuring the rational and effective use of gas; introduction of new technology in the field of gas use in the national economy;

adherence by construction-installation organizations doing construction work for the Gas Industry Ministry on the gas-collecting and gas-distribution networks (from the well mouth) in gas fields, field gas-collecting stations, gas preparation plants, key structures on the main pipelines and important compressor stations, main pipelines, compressor and gas-distribution stations, stations for the underground storage of gas, condenser lines, and also field bases, gas-accumulating stations and pipelines for liquified hydrocarbon gases (henceforth called "gas facilities") to the norms and rules used in construction of the mentioned facilities with respect to ensuring reliable and safe operation of these facilities; adherence by enterprises, combines, institutions and organizations carrying out work in places where main pipelines operated by the Gas Industry Ministry are being laid down to the requirements of the Rules for Safeguarding Main Pipelines.

5. The agencies of the State Gas Inspectorate exert control over:

adherence to the norms and rules for gas use by the gas-using enterprises;

existence of and adherence to specific norms for gas consumption and also for the soundness of these specific norms, the use of the allocated funds for gas and adherence to the stipulated regime for gas consumption, the state of accounting for gas consumption and also ascertaining the thermal energy and production generated by the use of gas;

technical level and state of gas-using plants and equipment with respect to ensuring the rational and efficient use of gas, the availability, proper operating order and correct use of the means for automatic regulation of gas combustion processes and instruments for heat engineering monitoring provided for in the designing of the gas-using plant, as well as the heat utilization equipment ensuring rational and efficient gas use;

availability at gas-using enterprises of the reserve fuel resources provided for them, the degree of preparation of these fuel resources for use, and also the degree of preparation of gas-using plants for operation on the established reserve types of fuel, conformity of the basic and reserve types of fuel to the types of fuel approved for this gas-using enterprise;

correspondence of the plans for gas-using plants to the requirements of rational and efficient gas use;

implementation of organizational-technical measures by gas-using enterprises directed to the saving of gas and also measures for stimulating the economical use of gas;

adherence by construction-installation organizations constructing gas facilities to the norms and rules applicable in the construction of the mentioned facilities with respect to ensuring reliable and safe operation of these facilities;

satisfaction of the requirements of the Rules for the Safeguarding of Main Pipelines by enterprises, combines, institutions and organizations carrying out work in places where main pipelines operated by the Gas Industry Ministry are being laid down;

elimination of violations discovered in the examination of gas-using enterprises and gas facilities under construction and also elimination of violations of the requirements of the Rules for the Safeguarding of Main Pipelines allowed in the course of work in places where main pipelines operated by the Gas Industry Ministry are being laid down.

6. Agencies of the State Gas Inspectorate, in accordance with the tasks assigned them:

a) in the established order give permission for the supply of gas to gas-using plants;

b) participate in the work of state acceptance commissions in approving initial operation of the facilities under their control;

c) participate in the development of schedules for the shifting of gas-using enterprises to reserve types of fuel when there is a considerable cooling, to be approved by the Councils of Ministers of union and autonomous republics, the executive committees of kray, oblast, Moscow and Leningrad city Soviets of People's Deputies and presented by them to the Gas Industry Ministry for coordination, and also monitor adherence to these schedules;

d) make recommendations on drafts of standards and technical specifications for gas-using equipment with respect to ensuring rational and efficient use of gas in this equipment and also on drafts of standards and technical specifications for materials and equipment used in the construction of gas facilities with respect to ensuring reliable and safe operation of these facilities;

e) make recommendations on the norms and rules formulated by ministries and departments applicable in the designing and construction of gas facilities and gas-using plants with respect to ensuring reliable and safe operation of these facilities and also rational and efficient use of gas in these plants;

f) participate in the work of commissions for investigation of cases of defects discovered in tests of gas facilities under construction and make reports on such defects.

7. The Chief State Inspector of the USSR Gas Inspectorate and his deputies, the senior state inspectors for gas inspection and the state inspectors for gas inspection, in accordance with their competence, have the right:

a) without obstacle and at any time of day to inspect gas-using enterprises (except for enterprises whose gas-using plants are operated in accordance to special rules), and also gas facilities under construction;

b) to give instructions to gas-using enterprises on matters relating to the accomplishment of rational and efficient use of gas and also on matters relating to the use of funds allocated for gas and ensuring the established gas consumption regime;

c) to give construction-installation organizations engaged in constructing gas facilities mandatory instructions on eliminating observed violations of the norms and rules applicable in the construction of these facilities with respect to ensuring the reliability and safety of their operation and also to stop work on gas facilities under construction in the event of violation of the mentioned norms and rules if such violations can lead to a decrease in the reliability and safety of operation of gas facilities; to stop work done by enterprises, combines, institutions and organizations in places where main gas lines operated by the Gas Industry Ministry are being laid down in the event that such work is being done in violation of the Rules for the Safeguarding of Main Pipelines.

The decision to stop work is in force until elimination of the violations which led to the adoption of such a decision.

After elimination of the violations leading to the work stoppage the work is renewed with permission of the State Gas Inspectorate agencies;

d) to check selectively the correctness of the requests presented by gas-using enterprises for the allocation of funds for gas and to submit proposals on these matters to planning agencies, ministries and departments;

e) to exert control over timely checking of the knowledge on the part of servicing personnel at gas-using plants of the rules for the technical operation of these plants and the norms and rules for the use of gas and to give mandatory instructions to the directors of gas-using enterprises on matters relating to the employment at gas-using plants of persons prior to checking of their knowledge concerning the mentioned norms and rules or violating their requirements;

f) to participate, in the established order, in investigation of cases of personal injuries occurring during the cleaning of gas holders and in tests of pipelines under construction for the Gas Industry Ministry if such work is done with the use of gas as a cleaning agent or test medium and to require from construction-installation organizations the formulation and implementation of measures for eliminating the reasons for personal injury;

g) to inquire from ministries, departments, enterprises, combines, institutions and organizations for the necessary information and materials on problems relating to the competence of State Gas Inspectorate agencies;

h) in the necessary cases to call upon specialists of scientific research and planning institutes and other organizations, in agreement with the directors of these organizations, for carrying out expert evaluations and rendering conclusions concerning matters falling within the competence of the State Gas Inspectorate agencies;

i) to submit to the corresponding ministries, departments, enterprises, combines, institutions and organizations proposals on bringing to account functionaries allowing violation of the norms and rules for the use of gas at gas-using enterprises applicable in the construction of gas facilities with respect to ensuring the reliable and safe operation of these facilities and also the requirements of the Rules for Safeguarding of Main Pipelines when carrying out work in places where main pipelines operated by the Gas Industry Ministry are being laid down and also functionaries who at the established times do not carry out the instructions of officials of the State Gas Inspectorate agencies on eliminating the observed violations; in the necessary cases transmit to the office of the state prosecutor information which can be used in solving the problem of whether the mentioned individuals should be charged with criminal responsibility.

8. The Chief State Inspector of the USSR Gas Inspectorate and his deputies are given the right to make the decision to suspend the delivery of gas to gas-using plants in the case of delivery of gas to these plants without permission of the State Gas Inspectorate agencies, and also when there is noncompliance with the instructions of functionaries of State Gas Inspectorate agencies with respect to eliminating the following violations allowed by gas-using enterprises when using gas:

exceeding the allocated funds for gas or nonadherence to the established regime for gas consumption;

gas consumption at gas-using plants without the approved specific gas consumption norms or exceeding these specific norms;

operation of gas-using plants without registry of gas consumption or without reckoning the thermal energy and production generated with the use of gas or the lack (malfunctioning) of means for the automatic regulation of gas consumption processes or instruments for thermal engineering monitoring or heat utilizing equipment provided for in the plan for the gas-using plant ensuring the rational and efficient use of gas;

nonreadiness of the reserve fuel resources provided for in the plan for the gas-using enterprise or nonreadiness of the gas-using plants for operation on the stipulated reserve types of fuel;

use of main and reserve types of fuel by gas-using enterprises which do not correspond to the types of fuel stipulated for them.

In the rules for use of gas in the national economy approved by the Gas Industry Ministry provision can be made for cases when the cessation of gas delivery to gas-using plants is not allowed.

The decision to suspend gas supply is effective until there is elimination of the violations which were the basis for making such a decision.

After the elimination of the violations responsible for cessation of the delivery of gas to gas-using plants the delivery of gas to these plants is renewed by permission of the corresponding State Gas Inspectorate agencies.

9. The directors of construction-installation organizations, regardless of their departmental affiliation, are obliged to report at once to State Gas Inspectorate agencies concerning all cases of damage to pipelines under construction under the control of these agencies occurring during the cleaning of holders and their testing and also on cases of personal injury occurring when carrying out the mentioned work if this work was done with the use of gas as a cleaning agent or a test medium.

10. Enterprises, combines, institutions and organizations under the control of State Gas Inspectorate agencies are obliged to supply these agencies and their workers in the field with a place to work and also with departmental communication and transport facilities for carrying out the obligations assigned to them.

11. The actions of functionaries of the State Gas Inspectorate agencies can be appealed to the superior functionary within a 10-day period unless legislation provides for a different appeal procedure. The filing of an appeal in no case will stop implementation of the appealed decision.

12. Functionaries of the State Gas Inspectorate agencies have identification cards of the same type.

13. State Gas Inspectorate agencies have a seal with a representation of the USSR coat of arms and with the appropriate name.

5303
CSO: 1822

FUELS

GAS INDUSTRY ACHIEVEMENTS DETAILED

Moscow EKONOMICHESKAYA GAZETA in Russian No 28, Jul 80 p 3

[Unsigned article: "Semiannual Goal Overfulfilled"]

[Text] During the first half-year the national economy has received more than 214 billion cubic meters of natural gas -- 6.7% more than during this same period last year. The six-month goal has been fulfilled and overfulfilled by all gas-producing combines.

The workers of "Orenburggazprom" have done a fine job. This combine produced 1.3 billion cubic meters of gas above the plan. A considerable increase in output was achieved in the gas fields of Western Siberia. The "Tyumengazprom" produced 618 million cubic meters of gas above and beyond the target. The "Ukrgazprom" and "Turkmengazprom" enterprises during the six months produced a great quantity of gas above and beyond the plan.

The productive capabilities of this branch of the fuel industry are increasing. A new plant for the annual processing of 3 billion cubic meters of gas has been put into operation in the Orenburg complex. Such major main-line gas pipelines as Chelyabinsk - Petrovsk, 1,237 km in length, the second increment of the Urengoy - Chelyabinsk line with a length of 445 km, and the 79-km segment from Urengoy to Nadym were put into service during the first half-year. The handling capacity of the operative main lines increased after the starting-up of a number of new compressor stations.

Now the workers in the gas industry are pumping gas into underground storage facilities, creating a reserve for winter. The goal set has been met.

In honor of the 26th Party Congress the workers of "Ukrgazprom" have committed themselves to produce not more than 800 million cubic meters of gas above the plan, but 1.2 billion cubic meters.

5303
CSO: 1822

FUELS

UKASE ORDERS MANAGERS PENALIZED FOR MISUSE OF GAS

Moscow VEDOMOSTI VERKHOVNOGO SOVETA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK in Russian No 20, 14 May 80 pp 342-343

[Ukase No 2083-X, 7 May 1980, of the Presidium of the USSR Supreme Soviet: "On the Administrative Responsibility of Officials for Violations of the Norms and Rules for the Use of Gas"]

[Text] The USSR Supreme Soviet Presidium decrees:

1. To establish administrative responsibility of officials in the form of a warning or a fine in an amount of up to 100 rubles for the following violations of the norms and rules for the use of gas as a fuel or raw material:

The release of gas to a gas-using installation without authorization of organs for state control of gas;

An exceeding of the allocated stocks for gas or nonobservance of an established regime for gas consumption;

The consumption of gas at gas-using installations without approved specific gas-consumption norms, or an exceeding of such specific norms;

The operation of gas-using installations without an accounting for gas consumption or without an accounting for the thermal energy or product produced with the use of gas, or the absence (or maladjustment) of means of automatic regulation of gas-combustion processes called for by the design of a gas-using installation, or of instruments for heat-engineering monitoring, or of heat-recovery equipment that provides for the rational and effective use of gas; and

The nonpreparation for operation of a reserve-fuel activity specified for a gas-consuming enterprise, association, institution or organization, or the nonpreparation of gas-using installations for operation on the established types of reserve fuel.

2. Measures for the administrative penalties established by Article 1 of this ukase can be used against the following guilty officials of enterprises, associations, institutions and organizations: managers, assistant managers, chief power engineers (or chief mechanical engineers) and chiefs of departments and services.

3. Administrative penalty measures called for by this ukase are applied by administrative commissions under executive committees of rayons, cities, and rayon and city soviets of people's deputies. The basis for examination by an administrative commission of matters concerning violations of the norms and rules for the use of gas as a fuel or raw material is the record made up by a fully empowered official of an organ for the state control of gas.

Chairman of the Presidium of the USSR Supreme Soviet L. Brezhnev
Secretary of the Presidium of the USSR Supreme Soviet M. Georgadze
Moscow, the Kremlin, 7 May 1980, No 2053-X

11409
CSO: 1822

BAKU CONFERENCE DISCUSSES DEEP WELL DRILLING

Baku BAKINSKIY RABOCHIY in Russian 10 Jul 80 p 3

[Article by Azerinform: "High Quality for Drilling Operations"]

[Text] A scientific and technical conference took place for 2 days in Baku that treated the results and directions for scientific research work in the area of drilling deep wells. It was organized by the associations "Azneft'," "Kaspmorneftegazprom" and AzNIPIneft'[Azerbaijan Scientific Research and Planning Institute of the Oil Industry. The opening speech of the conference was given by Academician of the Azerbaijan SSR Academy of Sciences M. T. Abasov.

During the Ninth and 10th Five Year Plans, it was noted in the reports of the scientists and specialists, in Azerbaijan scientific research searches were intensified in the area of perfecting equipment and technology of deep drilling. This promoted the successful development of new oil and gas fields, emergence onto deep-sea offshore fields, and increase in the volume of inclined drilling. Certain advances were also made in the mechanization of labor-intensive processes in work to prepare washing solutions that meet the requirements of drilling in geologically complicated conditions.

Nevertheless,the rates of growth in the technical and economic indicators of the republic drilling organizations lag behind the planned. In particular, for the association "Azneft'" and the all-union production association "Kaspmorneftegazprom" a reduction occurred in the volume of exploratory work both in the Ninth Five-Year Plan and in the 4 years of the 10th. In relation to the increasing depth of the wells, the movement of the drilling operations to new areas with unstudied section, the conference noted the special importance for the most rapid solution of geological tasks that will be found in accelerated rates of drilling, and decrease in the outlays for well tunneling.

The conference adopted a decision that plans for the paths of future research in the area of drilling deep wells using the modern achievements of science, practice and leading experience.

9035

CSO: 1822

FUELS

NEW ADMINISTRATION CREATED IN OIL INDUSTRY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jul 80 p 2

[Article by Correspondent Aleksandr Petrukhin, interview with V. I. Kremnev, First Deputy Minister USSR Petroleum Industry, "Bringing Petroleum Strata to Obedience"]

[Text] An administration for increasing the petroleum output of strata has been established in the Petroleum Industry Ministry. Why was the new subdivision created? How will the output of liquid fuel from strata be increased? APN correspondent Aleksandr Petrukhin directed such questions to the First Deputy Minister of the USSR Petroleum Industry V. I. Kremnev.

***

"Our country," stated Vladimir Ivanovich, "with respect to the annual production of petroleum solidly occupies first place in the world. Despite some difficulties, which are associated, in particular, with the natural dropoff of the production of liquid fuel in old deposits, petroleum workers are doing everything so that they can cope in the proper time with the plans and socialist obligations. This has assisted in overfulfilling the plan for the production of petroleum and gas condensate in the first quarter of the present year. The country has obtained 148 million tons of 'black gold' (including gas condensate).

Soviet geologists are continuing to discover new petroleum reserves. This is evidence that our country has a reliable fuel base and it is not threatened by the energy crisis which is now being experienced by many countries in the west. However, we are concerned with the problem of a careful attitude toward petroleum raw material, which is not renewable. We therefore must be zealous owners of these resources, thinking not only about the present day, but also the morrow. And the state of affairs is now the following: not much more than 40% of the petroleum is extracted from the ground by existing production methods. And half of its geological reserves remain in the strata. The planned economy of socialism cannot be content with such a use of natural resources. After all, petroleum is an important factor in social and technical progress. The task of the newly created administration is to organize, on a strictly scientific basis, introduction of methods making it possible, to a considerable degree, to increase petroleum production from deep layers."

Q: As is well known, in our country the method of flooding of strata has come into extensive use. Will it be further developed in the future?

A: "We make extensive use of the method of working of deposits by squeezing out petroleum with water pumped into the strata under high pressure. Ninety percent of all the petroleum in the country is produced by this method. Altogether more than one billion cubic meters of water per year are pumped into the strata.

The method for the flooding of deposits is constantly being improved. However, it can no longer satisfy us because it has reached its limit. In addition, the pumping-in of water leads to a considerable 'watering' of the product produced from the boreholes, and this creates new difficulties. The time has come to proceed to a higher technical and technological level of working of the deposits."

Q: What has been done in this direction?

A: "The Fundamental Directions in the Development of the USSR National Economy During 1976-1980" outlines the task: improve the use of natural resources of petroleum, increase the petroleum output of strata. In this connection a long-range multisided program has been adopted for the introduction of petroleum production methods. Its formulation involved the participation not only of petroleum men, but also chemists, petrochemists, power specialists and machine builders. This program stipulates the specific times and volumes for the introduction of new methods in deposits and defines the tasks of other ministries responsible for the production of the necessary chemical reagents and special equipment, in particular, highly productive steam-generating plants operating under high pressure, powerful compressors for forcing gas and air into strata, etc.

Two specialized scientific-production combines -- 'Soyuznefteprombkhim' and 'Soyuztermneft'' -- have been created in the ministry. They will be directly responsible for the field introduction of new methods for increasing petroleum output."

Q: Which new methods have now been developed for increasing petroleum output and what is the effect of their use?

A: "During the elapsed years of the Tenth Five-Year Plan several such methods have been prepared for industrial introduction. I will mention some of them: flooding with the use of solutions of surface-active substances and polymers, pumping in of caustic soda, sulfuric acid, gas under high pressure, hot water, steam, intrastratum combustion and others. Experiments with the introduction of new petroleum production methods have been carried out in 45 deposits in the country. The first positive results have already been obtained. They are making it possible to predict an increase in petroleum production up to 10-15%, it goes without saying, in dependence on the peculiarities of the deposits. This will make it possible to return to the active balance of reserves several billion tons of petroleum which cannot be extracted by existing production methods.

The introduction of new technology is not an easy process. It happens that some projects are worked on too long and the effect from their introduction is low. In addition, from time to time parallel investigations are made on one and the same theme. In many cases enterprises which are manufacturers of equipment are put under us. The new administration is intended for the coordination of all this work. Its task is to ensure a high level in the drawing up of technological plans for the exploitation of deposits and the speediest possible introduction of progressive methods for the production of liquid fuel.

5303
CSO: 1822

FUELS

SEARCHING FOR PETROLEUM AND GAS

Moscow IZVESTIYA in Russian 26 Jul 80 p 2

[Article by I. Novodvorskiy: "Guides for Explorers of the Earth's Depths"]

[Text] On 24 July 1980 the USSR State Committee on Inventions and Discoveries registered a discovery made by a large group of scientists and specialists of the USSR Academy of Sciences, USSR Geology Ministry and USSR Petroleum Industry Ministry. As a result of theoretical and experimental large-scale investigations they discovered an earlier unknown natural phenomenon. The essence of this discovery is that specific physical, chemical and microbiological fields are formed around local rises in the earth's sedimentary cover containing minerals, especially petroleum and gas.

The experimental basis for the discovery was numerous results of seismoacoustic, electro- and gravimetric prospecting, geochemical and microbiological studies carried out both at the earth's surface and in deep boreholes in many regions of the Soviet Union -- on Sakhalin, in Western Siberia, Central Asia, in the Ural-Volga and Baltic areas.

The discovery is facilitating the development of new scientific directions in the theory of formation of minerals and methods for their prediction, as well as improvement in the strategy of search for and exploration of mineral deposits, especially petroleum and gas.

The practical importance of the discovered phenomenon is a considerable increase in the effectiveness of geological prospecting work due to a sounder interpretation of the results of geophysical, geochemical and biogeochemical observations.

5303
CSO: 1822

FUELS

SAMGORI-BATUMI OIL PIPELINE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Jul 80 p 1

[Article by I. Shvarts, Samgori, Georgian SSR: "Mountain Route"]

[Text] A new oil producing area is gathering momentum in the southern part of our country. The young Gruzneft' Association is presently producing each year several million tons of liquid fuel and chemical feedstocks. And when the Samgori-Batumi oil pipeline goes into operation, movement of crude to the refineries will increase substantially.

Work is at a fever pitch on the spread of this pipeline. Workers from Groznyy, Krasnodar, Rostov, and other Glavyuzhnotrubprovodstroy subunits have sent their best mechanized columns into the mountains. But the bulk of the work will be performed by the labor force of the Georgian administration of the Ministry of Construction of Petroleum and Gas Industry Enterprises. They will be laying more than 300 of the 425 kilometers of pipeline.

...After crossing the Suramskiy pass, the pipeline construction workers descended into the Kolkhidskaya depression. The term depression, however, is not particularly appropriate, since the topography in this area contains gradients as steep as those on mountain passes. The labor force of Section 4 of Gruztruboprovodstroy, under the supervision of V. Barbakadze, is presently working at an elevation of 963 meters above sea level. It has already completed 44 of 64 kilometers of pipeline, which is considerably above the plan-specified target.

A majestic mountain view opens up from this high ground. Only the narrow yellow right-of-way strip, which is visible here and there, indicates the passage of an oil pipeline route. Here and there along the right-of-way a string of pipe which has not yet been lowered in lies gleaming in the sun. Soon the green grassy cover on the slopes will merge and hide this complex structure which cost so much labor.

The Dzirula River, confined by the mountains to a narrow gorge, crosses the route at several points. The river crossing is particularly difficult in the area where the construction crews under job superintent B. Mumladze are working. After the pipe string is run across the river on supports, the construction workers must neatly tie in the crossing string with pipe running down the steep slopes.

Digging tracks into the soil, the mechanized column moves out. Pipe carriers based on powerful Ural chassis haul pipe joints to the submerged arc welding machine, which is located on the summit of a gently-sloping hill. Here the pipe joints are welded into doubles. The stringing truck does not go beyond this point. Only a powerful tractor is capable of delivering the pipe section to the alignment and welding site. A sideboom tractor then moves the next pipe section into position for alignment, and the welders go to work.

Dividing the work cycle into several operations, the men of A. Yusupov's crew extend the pipeline section by section on both sides of the crossing. The work process is set up smoothly on this crew -- without unnecessary movements or conversations. A signal tap with a hammer on the pipe, and the sideboom operator aligns the pipe to the required angle. One can see clearly with this example how quickly the experience and know-how of the top workers is assimilated by all. It was quite recently that sound signaling was adopted on Siberian pipeline routes by USSR State Prize recipient B. Diduk. Now this technique is being employed by Georgian pipe gangs.

Those working at locations where for various reasons the pipe stringers were unable to bring in the pipe on schedule have the most difficulty. Linking these "gaps" into a continuous pipeline requires jeweler's precision on the part of the tie-in crew. The Vakhtangov brothers are doing a particularly fine job on the special tie-in crew formed to do this job. At the most inconvenient sites and regardless of bend, these experienced welders are capable of bringing the pipe into alignment and placing a weld of complex geometric configuration.

"Right now is the hottest time, in the literal and figurative sense," stated N. Davituliani, foreman of the mechanized cleaning, priming and coating gang. "In winter, when there was 2 meters of snow on the ground in the mountains, we had to clear the right-of-way down to solid ground. Now we must make up for lost time."

Welding gang foreman A. Yeremin, administration veteran V. Makharashvili, and sideboom operator A. Toguladze are doing shock-work labor.

There are dozens of crossings and hundreds of obstacles along a stretch of only 64 kilometers. But the pipeline builders, engaged in vigorous competition in honor of the forthcoming 26th CPSU Congress, have pledged to complete their pipeline section ahead of schedule.

3024
CSO: 1822

KATEK COAL SUPPLY REPORTED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 Jul 80 p 2

[Article by B. Pichugin, coal industry sector chief, Krasnoyarskiy Kray CPSU Committee, Krasnoyarsk: "Ready Coal in Summer"]

[Text] Last winter in Siberia was a mild one, but it brought many difficulties. Even at the big industrial enterprises they were counting the days remaining to the spring thaw. And it is not surprising, for that summer customers in the kray and neighboring oblasts had been short-supplied approximately 1.2 million tons of coal, which means the requisite stockpiles for the fall and winter season had not been established. The decree recently adopted by the USSR Council of Ministers, entitled "On Providing Fuel, Electricity and Heat to the Economy and General Public in the 1980/81 Fall-Winter Season" compels us once again to analyze the lessons of last winter and to draw important conclusions.

The thermal electric power stations of USSR Minenergo [Ministry of Power and Electrification] and the block-stations of Altayskiy Kray, Irkutskaya, Kemerovskaya, Novosibirskaya, Omskaya, and Tomskaya oblasts, which are fired by coal from the Kansk-Achinsk and Minusinsk basins, are unified into a Siberian power system. The coal industry workers in our kray want to ensure that our neighbors receive adequate stockpiles of fuel for the fall-winter season, because a decline in power generation in any part of the Siberian YeES [Unified Power System] has an immediate effect on the power customers of the entire region, and that includes industrial enterprises in Krasnoyarskiy Kray. Only precise coordination of the actions of coal miners and power industry workers, only joint efforts, in spite of ministerial disconnectedness and administrative boundaries, can lead to success. Last year we were unfortunately unable to achieve such coordination. Why?

When are operations at coal strip mines easier, in summer or winter? This would seem to be a simple question. The reader will say summer, of course. An expert might amplify this answer. When the temperature drops below 40 degrees centigrade, the belt conveyers of the rotary excavators practically cease working. Yet approximately 70 percent of coal produced in the strip mines of the Kansk-Achinsk basin is cut by rotary equipment.

A simple question, but in actual fact it proves to be fairly complex. Year after year Minugleprom [Ministry of the Coal Industry] targets considerably more coal production for the KATEK coal miners in the fourth quarter than in the third. This year, for example, the difference amounted to 3 percent of the year's production, which means practically a million tons of coal! Why should this million tons not be produced in the summer, somewhat easing the already difficult job of coal miners in the winter season?

We performed a small analysis in the kray. As it turns out, coal storage areas are empty in the summer at a number of enterprises of USSR Mintsvetmet [Ministry of Nonferrous Metallurgy], Minstankoprom [Ministry of Machine Tool and Tool Building Industry], Ministry of Railways, and Minlegprom [Ministry of Light Industry], while heavy coal consumption begins toward the end of the year. Instead of stockpiling coal for the fall-winter season, the industrial plants seek constantly to receive coal "right from the car," and therefore they do not seek funds to pay for advance stockpiling. This situation is typical not only of our kray but also of other Siberian oblasts. Obviously if when planning quarter-by-quarter coal deliveries they will take into consideration possibilities of stockpiling coal for the fall-winter season, this will not only ensure more uniform work-loading of coal mining enterprises but will also become a substantial guarantee of normal operation of industrial enterprises during the period of maximum fuel consumption.

But producing the coal is only half the job. It must also be delivered to the customer in a timely manner. Shuttle coal trains were supposed to firmly link coal strip mines and thermal electric power stations in neighboring oblasts. How are these shuttle trains operating?

Up to 1979 the Western Siberian Railroad, for example, handed over shuttle trains from Novosibirsk TETs-3 directly to the Achinsk division of the Eastern Siberian Railroad, within the boundaries of which is also located the Nazarovskiy strip mine, which supplies coal to TETs-3. As long as this shipping arrangement was in operation, the Novosibirsk power plant people experienced no difficulties. But last year a section of the Trans-Siberian Mainline was transferred over to the Kemerovo Railroad, and service interruptions began.

Now the Western Siberian Railroad passes the shuttle train to the Kemerovo Railroad, which in turn passes it over to the Achinsk division of the Krasnoyarsk Railroad. There has been a sharp deterioration in shuttle train service. As a result only 20 percent of the coal targeted by Minenergo had been delivered to Novosibirsk TETs-3 by 1 October of last year.

The Eastern Siberian Railroad differs somewhat from the Western Siberian as regards regular return of shuttle trains. The result was that coal stockpiles comprised only 73 percent of target at Irkutsk TETs-6 and the Ust'-Ilimsk TETs as of 1 October 1979.

For the entire summer of last year, the kray's coal miners were underdelivered approximately 20,000 high-side gondolas. In other words there is coal available, but nothing in which to haul it. Krasnoyarsk Railroad officials appealed time and again to the Ministry of Railways and to officials of neighboring railroads to do something to get the shuttle coal trains moving properly, but the situation did not improve. Minenergo, which one would think should have taken every measure necessary to meet its coal stockpiling target at the power generating plants, acted in a rather eccentric manner. Deputy Minister V. N. Budennyy sent telegrams to the Krasnoyarskiy Kray CPSU Committee requesting that coal shipment be speeded up. He stated that they were desperate for cars, but the railroad was not cooperating.

Last winter was a comparatively mild one, but this kray's coal miners will long remember it. Because adequate coal had not been stockpiled at power generating plants and enterprises, the strip mine workers of the Kansk-Achinsk basin were faced in the winter season of 1979-1980 with the necessity of meeting maximum fuel requirements with current production. An entire aggregate of measures of an organizational, technical and technological nature was carried out, and Communists set the pace in socialist competition. In the first quarter of this year delivery of coal to customers increased by 8 percent over the corresponding period last year; volume of coal cut exceeded by 14.8 percent the production capacity of the strip mines.

Has last year served as a lesson? Unfortunately not everybody has drawn proper conclusions. There still is no regular movement of shuttle trains to and from Novosibirsk TETs-3, and shuttle trains for hauling local freight are also being poorly utilized on the Eastern Siberian Railroad. Or take the following example. The Ministry of Railways, drawing up its operations plan for May, failed to provide for handing over empty shuttle trains from Novobirsk TETs-3 to the Krasnoyarsk Railroad. The error was corrected only after the railroad management appealed to the Ministry of Railways. Examining the performance of the Pavlodarskaya Oblast party organization in implementing CPSU Central Committee decrees on fuel and energy resource conservation at enterprises and construction projects, the party Central Committee pointed to the importance of establishing in a prompt and timely manner the requisite stockpiles of fuel in preparing for the fall-winter season. The coal miners of Krasnoyarskiy Kray adopted ambitious socialist pledges for the final year of the 10th Five-Year Plan, and the performance results for the first six months indicate that these pledges will be met. But in order to establish adequate stockpiles of coal, we need smooth, well-organized precision in the performance of the entire fuel-transport conveyer. The lessons of last winter serve as a reminder.

3024
CSO: 1822

FUELS

NERYUNGRI AND SOUTHERN YAKUT TERRITORIAL-PRODUCTION COMPLEX

Moscow TRUD in Russian 27 Jul 80 p 2

[Article by E. Gonzal'yez, TRUD special correspondent, Neryungri, Southern Yakutia: "People and Coal"]

[Text] The USSR Ministry of the Coal Industry, Ministry of Power and Electrification, Ministry of Transport Construction, Ministry of Communications, and more than 40 design institutes in Moscow, Novosibirsk, Tashkent, Yakutsk, Leningrad, Vorkuta, Tomsk and other cities are responsible for development of the Southern Yakut Territorial-Production Complex.

Approximately 700 million rubles have been spent on development of the TPK [Territorial-Production Complex] in the last five years. An additional billion rubles must be spent in the next two and a half years. We obviously have here a case of lagging development. But to many this is not yet obvious. A. Baranov, chief engineer of the Yakut Uglestroy Combine, is of the opinion that the volume of construction work which has already been performed in Neryungri is unprecedented in the history of the coal mining industry. As you see, everything depends on how one figures it. We say to you, however, that the pace of construction has up to the present time been inadequate to ensure that coke concentrate starts moving out of Neryungri in 1983. The chief engineer counters with the statement that the pace up to the present time has been more rapid than at any time in the history of this branch.

We must continue the debate.

"There is an objective indicator: the annual plan targets, which you fail to meet every year."

"These targets are unrealistic for us," parries the chief engineer.

This is not the first time I am writing about the Southern Yakut TPK, and there is no need to relate in detail all the deficiencies in organization of construction, let alone arguing the fact of their existence. In addition, a fairly representative commission of the USSR Ministry of the Coal Industry was operating at Neryungri, and will make a much more detailed report.

I shall be brief: the situation is such that, although there is an acute shortage of manpower, people are constantly standing around idle. There is no draft work organization plan for the project as a whole, while those timetables which are drawn up are not communicated to the executing personnel. Manpower is so scattered that last year from five to 10 persons were working on each production-designation facility. Precisely those facilities which were close to completion were not being completed and, on the other hand, work was being performed where they could have waited.

Even more briefly: the construction people (especially of Yakutuglestroy) were adhering to the following system -- do not do at the construction site that which is needed today but which can be done on the basis of present circumstances. And this means that there was no system whatsoever in construction management.

And yet construction has been in progress for five years now! Where were the associations, main administrations, and ministries looking? They looked where necessary, but only from Moscow, or at best from Yakutsk (incidentally, the latter is almost a thousand kilometers distant). Therefore much which is taking place in Neryungri is not seen quite realistically.

In my first report (TRUD, 19 July) I told about construction of a large-panel building construction plant in Neryungri. I enumerated the achievements of this plant: it was built fast, in six months. The construction workers labored heroically, giving everything they had. The plant turned out its first product even before formal acceptance. And the fact is that what has been accomplished, has been accomplished.

But now we shall take an inside look at what has been accomplished. First of all, the plant was artificially broken down into units, and less than one third of the enterprise was put into operation. Secondly, they failed to build a shop to produce keramzit [a lightweight concrete aggregate], and without it wall panels cannot be produced. Incidentally, keramzit can be hauled in.

Let us say they haul it in and fabricate a set of components for a five-story building. But in the block where the building is to be erected there is no heat, no water, no sewer, nor even plans.

But let us assume that they also surmount this difficulty. They erect the building, but for what purpose? Six brick and reinforced concrete building shells have been standing in this town for two years now -- there is nobody to do the finish work on them. There are only 30 plasterers in the combine instead of the needed 300.

Note that all these are problems which should be resolved by construction management. It is difficult to gain a full grasp of such a situation from Moscow. Nor is it really necessary, for the Southern Yakut TPK, in spite of the enormous work volumes, comprises an insignificant percentage of the overall branch program. But who should settle problems of construction strategy locally?

There is no such agency or entity. Neither theory nor practice of TPK development have available solutions on this score. Several client organizations are operating in the territory of this complex, and there are even more contractors and literally dozens of design organizations. All have their own views on the matter, their own principles, their own "uniform," and their own "problems."

It is interesting to observe how narrow departmentalism creates problems. The first unit of the treatment facility is currently in operation in this town, and is being supplied heat by a temporary boiler installation. A second unit is to be built, and four times as much heat is needed. The power engineering people should provide it, but they are "tied up" with GRES construction.

Then representatives of three power organizations -- Glavseverovostokenergo, Glavenergokompleksstroy, and Glavniiproyekt -- plan to get together for a meeting, and decide that the heat produced by the temporary boiler installation is sufficient for the second unit of the treatment plant as well. The USSR Deputy Minister of Power and Electrification approves the conference proceedings. As it turns out, the power engineering people do not need to build anything.

But there will be no heat produced from the conference proceedings. Ye. Varshavskiy, coal complex chief of construction, understands this well. But he is in a different ministry -- the coal ministry -- and cannot order the power people to do anything. He writes a humble letter to his deputy minister: "Please help us out. It is not yet clear how the matter will end, but things are all jammed up, and there are hundreds, even thousands of such problems on this construction project."

It was assumed that these problems would be resolved by a so-called coordination council of representatives of different ministries, meeting for this purpose once every three months. The idea has failed to prove effective. The council does not even meet twice a year, and there is nothing it could particularly accomplish: by this time problems are either tangled up for good, or somebody is handling them locally. And most frequently with the assistance of the party city committee, which has become transformed practically into a construction project dispatcher. But what can be done? Somebody has to divide, reconcile, bring together, get things going and, most important, see the end objective: coal concentrate in 1983.

For the officials of the various organizations, under the pressure of urgent problems, forget about this main task.

We continued our debate with A. Baranov, chief engineer of Yakutuglestroy. "Yes," he agreed, "there are many deficiencies in organization of construction. But is that really the point? Let us assume that we properly set up production and build the concentration plant on schedule. Let us just assume. But we are not the critical factor here; it is Yakutugol'. In any case the production people will not have the strip mine ready for production by that time."

And yet this same Baranov, together with combine chief V. Bocharov, turned this strip mine over to the production people less than a year ago. They have not yet corrected the problems, as they promised in their warranty letter. But now another organization has appeared, although of that same ministry, and there is one more opportunity to blame somebody else.

Definitely some one person is needed, possessing full authority and full responsibility. But who?

In Neryungri it would seem that the management of the coal complex under construction is most suited to this role. Ye. Varshavskiy has succeeded in putting together a management and administrative staff of 500 highly qualified personnel, who on behalf of the client organization have at their disposal the lion's share of the funding -- those very millions and billions of rubles.

"In the first place, however, there are also other client organizations here," stated Varshavskiy, "and secondly, we cannot dictate rules of conduct to the construction people either on the basis of law or authorities."

Today the ministry is accepting the year's operations plan from the management. Its own ministry. Another management, of the GRES construction, for example, has its own ministry to approve the plan. But who settles matters of dovetailing plans? Nobody.

"And who," I asked, "decided when the Volga Automotive Plant and the Kama Automotive Plant were under construction?"

"That is another matter altogether," replied Varshavskiy. "There was one client involved, and that client, with the rank of deputy minister, remained at the construction site and settled all questions with his own authority."

"Evidently authority does not do the job," I opined. "What is needed is a system, for there will be many TPK, and not enough deputy ministers to go around."

"Right. A management edifice for a TPK under construction is needed. Above ministry level. Which would go immediately to the TPK division of USSR Gosplan or the USSR Council of Ministers."

"Are there such divisions?"

"No, but I think they will be essential in the future. Somebody should be responsible for the development of territorial-production complexes, planning that development, supervising managements or whatever they will be called. Today we hold the purse strings, but that is not enough."

As it turns out, according to the statute on the construction client, Varshavskiy should deal with hundreds of matters, except for one very important item: he is not empowered to interfere in the internal affairs of the contractor.

The year's target, for example, specifies two buildings, but one of them is needed today, and the other tomorrow. The builders, however, want to build both at the same time, and he who is paying for the job cannot dictate to them. This is how plants appear lacking a keramzit shop, city blocks lacking service lines, and buildings lacking finishing operations.

Just as Varshavskiy, all other persons I interviewed claimed that a single unified TPK development management agency is needed.

"Today there are many proprietors, who see the end result in their own way," correctly commented Baranov.

"I have found nothing in the literature on how management should be," stated V. Sitnikov, party city committee secretary. "Those forms which we have -- coordination council, oblast headquarters -- are not proving effective. We must devise something."

First of all we should evidently turn to science -- specifically to the USSR Academy of Sciences, and then to USSR Gosstroy. It is for good reason that the CPSU Central Committee and USSR Council of Ministers decree entitled "On Improving Planning and Strengthening the Effect of the Economic Mechanism on Improving Efficiency of Production and Work Quality" states: "Establish that USSR Gosstroy bears responsibility for implementation of a uniform technical policy in construction...."

Practical experts are making some suggestions, albeit subject to debate, pertaining to TKP management. Why are the theorists remaining silent? They should be the ones to get things moving.

Imperfection of management, however, is only one of many causes of the occurrence of deficiencies. Another, no less important cause is the inadequately high professional level of the middle administrative echelon and the high rate of construction worker turnover in Neryungri. But we shall discuss this on another occasion.

3024
CSO: 1822

FUELS

LONGWALL MINING MACHINES' POTENTIAL NOT FULLY UTILIZED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 4 Jul 80 p 2

[Article by V. Nikitin, First Deputy Minister of USSR Coal Industry: "Give the Coal-Mining Complexes a Full Workload"]

[Text] It will not be a great exaggeration to state that, with the appearance of mechanized complexes in underground mines, a real technical revolution has been executed in the coal industry. A mechanized complex means primarily unprecedented productivity of miners' brigades and an immeasurably increasing workload at the mine face. It is a radical change in the very content of the difficult work of mining, which now requires not so much physical effort as deep technical knowledge and skill in controlling the most complicated machinery.

Based on the use of longwall-mining machines in the industry, the remarkable movement of the "thousandeers," which has received a high appraisal, has appeared. Right now hundreds of worker collectives are mining 1,000 or more tons of coal per day per longwall equipped with integrated mechanized equipment. Tens of brigades are participating in the competition of the 500,000-tonners--to mine 500,000 tons of fuel per year. But brigades and sections under our paragons--M. Chikh, A. Kolesnikov and N. Skrypnik in the Donbass [Donets Coal Basin], M. Reshetnikov, V. Devyatko and G. Smirnov in the Kuzbass [Kuznetsk Coal Basin] and A. Salamatin in Karaganda--are sending 1 million tons of coal to the surface per year.

For USSR Minugleprom [Ministry of Coal Industry] as a whole, little more than one-third of operating coal longwalls have now been supplied with longwall mining machines. But they do two-thirds of the underground mining. Further expansion of the sphere of use of highly productive continuous miners and other modern machinery is of decisive significance today in successful fulfillment of the tasks that face the branch's workers and in a further buildup of the country's fuel and energy potential.

However, one cannot close one's eyes to cases of a different sort. During the first 4 years of the five-year plan, coal mining by longwall mining machines increased by 48 million tons, but, in so doing, underground mining not only did not grow in volume but it was even reduced by 15 million tons. Last year alone, longwalls with integrated mechanization fell short of the plan by 14 million tons of fuel. Their workload was appreciably below the designed workload.

In other words, the yield from using the longwall mining machines has proved to be considerably lower than what we have a right to expect. What is the matter here?

When meeting with local supervisors, one often hears references to objective difficulties. And it is true that nowadays the underground miners have to operate under mining-geology conditions that are much less favorable than they were some years ago. There is an ever-increasing growth in the mining of thin and steep seams, where productivity of the complexes drops sharply, and at times it is impossible to use them at all. A definite portion of the cutter-loaders is marked by expired service life and needs to be replaced.

All this is so. A list of the so-called objective causes can easily be continued. However, it would be radically incorrect to explain the situation that has been created solely by these factors.

An analysis by specialists of the ministry and the industry's scientific-research institutes shows convincingly that we have some serious deficiencies in use of the longwall mining machines. The great potential that they incorporate is far from being completely realized. It is here that one should search for the main cause of the unsatisfactory work of a number of coal associations and underground mines.

It was planned that cutter-loader worktime would be brought up to 31 percent of total shift time during the current five-year plan. Instead of this, machine time has been reduced, and it is now 26.3 percent. The workload per mine face with integrated mechanization has been reduced accordingly. Where is the time being lost? It goes into executing terminal operations, relocating the conveyors and roof-support sections, cleaning up the longwall and other operating processes not directly connected with removing the coal. And a high-powered cutter-loader stands still....

At first, when we were just beginning to introduce longwall mining machines, the startup of each of them was a special event. With the years, the feeling of novelty has been lost, which, in general, is completely natural. But, at the same time, the feeling of responsibility for effective use of the equipment on the part of some coal-enterprise managers, engineers, technicians and economic services of associations and underground mines has been deadened. One can in no way be reconciled with this.

Formerly, plans for the introduction of mechanized longwalls into operation at underground mines were worked out in detail. The plans incorporated well-thought-out technical and organizational solutions that had been adopted on the basis of scientific recommendations. Then they were reviewed by the association's appropriate services and were approved by the engineering director. Active engineering thought was visible in all these measures, and there was a striving to get maximum yield from each complex. And the results obtained were high.

Such thorough and earnest preparation is rarely encountered now. Finally, there are more of the complexes, and it is difficult to follow up on all of them. But indeed, since then the skills of personnel have risen by far, and rich experience has been gained. Yet the operating level of the machines is not what it was 10 years ago. So it is that, under these new conditions, there is a real possibility to provide for a high level of engineering solutions applicable to each concrete case. Unfortunately, that does not by far always occur in practice.

Take, for example, such a problem as the preparation of longwalls for operation of the mechanized complexes. At certain underground mines, especially in the Ukraine, they are cut up into lengths of less than 300 meters. Is this good or bad? At first glance it is good: there is a saving of time for preparatory and assembling and disassembling operations. And productivity apparently is higher. Longwalls 160-180 meters long equipped with KM-87 complexes have a workload of 770 tons, and those 250 or more meters in length yield 840 tons of coal per day.

However, the picture looks somewhat different after a more careful review. For each meter of mine face and for each section of roof support, a workload is obtained in such longwalls that is two-thirds of the ordinary workload! If we are to speak about rational use of the equipment, then the average daily workload here should be not 840 but 1,200-1,300 tons. It turns out that only through a more cautious and scientifically valid approach to the selection of longwall length is it possible to raise effectiveness of use of the complexes very much.

We have no few such reserves. There is no necessity to elaborate on them in detail. However, it is necessary to dwell on certain basic factors of both the engineering and the organizational plan.

At many underground mines preference is given to tunneling excavations of small cross-section, justifying it by a striving to save on labor costs for tunnelers. In principle it turns out to be right. But indeed, it must be judged by the final result, and the tunneling is only an intermediate step. Where longwall mining machines operate, such a saving results, in the final analysis, in major losses.

At the Donets Underground Mine imeni Zasyad'ko, for example, in order to provide for high productivity of mechanized longwalls, contiguous excavations at least 13 square meters are required. But, as was the case many years ago, they are driven with little more than half that diameter. As a result, the workload at the mine face here is 15 percent lower than planned. The mine regularly fails to carry out the task.

The situation is the same at the Belorechenskaya Underground Mine in Voroshilovgrad, the Kazakhstanskaya Underground Mine in Karaganda, the Kuznetskaya Underground Mine in Leninsk-Kuznetsk and a number of other enterprises. Because of inadequate cross-section of the excavation, it is impossible to erect modern transport equipment for sending the fuel to the surface. It is necessary either to artificially hold back on mining, or to overload the conveyor, which often leads to breakdowns.

The ministry has repeatedly called the attention of association managers to the need to use repair shifts for the immediate purpose: for adjustment and preventive maintenance of the equipment. But so far we have not achieved decisive changes. At about half of all the mine faces surveyed in the Donbass, a substantial part of the time alloted to repair is spent excavating coal and not on technical servicing of the equipment. Such an organization of production means operation until the equipment is worn, and, as a consequence, there is a high breakdown rate, above-norm idle time of the complexes, and mining losses.

The introduction of a system for technical servicing of equipment in accordance with requests and reports began in the coal industry in the last few years. Such a system provides for the issuance of concrete tasks for the conduct of various repair operations, raises the responsibility of the users, and enables information about the condition of the equipment and breakdowns thereof to be received on a more current basis.

The effectiveness of its use is extremely high. In the Pavlogradugol' and Shakhterskantratsit coal-mining associations, where it has been introduced, mining losses because of machinery breakdowns have been reduced by 22 and 37 percent, respectively. But no kind of system will produce results if the repair shifts will be loaded down with coal-mining tasks.

The basically different approach of the modern era requires that such operations as assembly and disassembly of equipment be done when transferring from one longwall to another. We have examples of excellent organization of this job. Thus, at the Zyryanovskaya Underground Mine of the Yuzhkuzbassugol' Association, the OKP-70 complex was once mounted in about 4 days, all told, several times as rapidly as required by the standards.

But such cases, unfortunately, are very few. In the past year, the idle time of longwall mining machines during assembly and disassembly while waiting for these operations exceeded the norm by far. The utilization coefficient of cutter-loaders in the Donbassantratsit, Makeyevugol', Prokop'yevskugol' and Tulaugol' associations, where about 60-67 percent of the machines are located, have especially low utilization coefficients.

The situation is even worse with disassembly of the equipment. A check has shown that at half of the longwalls that have been worked out, disassembly of the complexes begins only a month later. This is equivalent to inactivity of 50 complexes for a year, or the loss of 10-12 million tons of coal.

By decision of the ministry, 17 specialized administrations for the assembly-disassembly and adjustment of equipment--primarily of mechanized complexes--have been created in the country's coal basins. Right now measures are being worked out to make schedules for the introduction and retirement of mine faces, as well as the designs for longwall preparation, more detailed and more specific.

The industry's scientific-research institutes have been charged with working out proposals for improvement of preparation of the clearance front and acceleration of the assembly and disassembly operations.

Comrade L. I. Brezhnev's report to the June Plenum of the CPSU Central Committee spoke about the fact that it is necessary during the period preparatory to the 26th party congress to search critically for oversights and deficiencies that exist in management practice. A rise in the effectiveness of new equipment is one of the main reserves for labor productivity growth in industry. And right now, when getting ready for the All-Union forum of communists, we should use all opportunities to bring these reserves into action.

The ministry has developed a specific program for a sharp rise in the utilization effectiveness of longwall mining machines that covers the broad range of questions associated with this severe problem. The mission was posed like this: a full workload for every complex, and for every mechanized longwall! Growth in coal mining in underground mines, and, consequently, more complete satisfaction of the constantly rising requirements of the national economy for solid fuel, depends upon how we are able to solve it.

11409
CSO: 1822

FUELS

NEW CASPIAN OFFSHORE OILFIELD FOUND

Moscow PRAVDA in Russian 13 Jul 80 p 1

[Article by L. Tairov (Baku): "The Prognosis Has Been Confirmed"]

> [Text] The drill bit reached an oily cross-section at a depth of 3,500 meters. The geologists' forecasts have been confirmed: going into operation nearby on a steel islet is a well with a daily flow of 250 tons. The occurrence is not a chance event. It means that still another field is gaining strength 10-12 km from the celebrated Neftyanyye Kamni offshore field. It has been named the Oilfield imeni 28 Aprelya in honor of the date of the establishment of Soviet power in Azerbaijan.

No, the underwater oil reservoirs have not run dry. The wonder city on skeletal trestles in the open sea continues to grow and grow.

Competition in honor of the 26th party congress grows ever wider at Neftyanyye Kamni. The little town has had about 25,000 tons of crude oil above plan to its credit since the start of the year. Its first-group output was 91.2 percent versus the 85 percent called for by the plan. Manager G. Shikhiyev is in charge of the worker competition of the departments. All the wells are working in an optimal operating regime, and observance of the regime is subjected to vigilant monitoring.

If a well requires repair, then the brigade of foreman A. Khalilov undertakes this complicated matter. This collective has already fulfilled the five-year task. At other sections hundreds of tons of additional crude have been obtained, thanks to the rapid completion of new wells. And well No 1129, which has returned to operation, is yielding more fuel than prior to its repair. The brigade of Z. Ayrapetyan from Azmorneftestroy [Azerbaijan Trust for the Construction of Oil Industry Facilities] is finishing construction of the next platform, from which four wellbores will be placed into the earth's depths ahead of time.

"Kamni's" machinery and equipment--180 km of trestles, pump and compressor stations, gathering facilities, steam-turbine electric-power stations, and much else--will enable the actual hiding places of the underground storerooms to be penetrated.

Drilling in remote regions of the open sea has been entrusted to foreman Hero of Socialist Labor and Deputy of the USSR Supreme Soviet Israfil Guseynov. His brigade, having completed the first well, is working on a second one.

"Accepting precongress commitments, we see the future clearly," says the foreman. "Greater depths of the Caspian lie ahead. A high-capacity plant that is being built in Karangda to make deepwater offshore platforms, which will enable us to drill wells in water up to 200 meters deep, will help to conquer these depths."

Chief geologist of Azmorneftegazprom [Azerbaijan Association for the Offshore Production of Oil and Gas] G. Yusufzade adds to what has been said:

"Not long ago, in the Bulla-more region, the brigade managed by Guseynov turned over for operation a well that had been drilled with a speed of more than 500 meters per rig per month, a record for the local area. This saved about 1½ million rubles. The well is yielding 600,000 cubic meters of gas and 200 tons of condensate daily. The fuel is coming from the 6,170-meter level. We are receiving output from such shelf depths for the first time."

...The explorers of the oil storehouses are going ever farther and farther from shore into the open sea.

11409
CSO: 1822

BRIEFS

NEW DEPOSIT IN WORK -- Uray (Tyumenskaya Oblast), 15 Jul 80 (TASS) -- The first operational borehole at the Yem-Yegovskoye petroleum deposit was drilled by the brigade of Master I. Ragimov. The drillers began to exploit this deposit ahead of schedule because of the geologists, who ascertained the site of the petroleum-bearing structures earlier than planned. In the final year of the five-year plan the drillers will drill 35,000 meters of boreholes. [Text] [Moscow PRAVDA in Russian 16 Jul 80 p 2] 5303

NEW PIPELINE IN OPERATION -- Frunze, 8 Jul 80 (TASS) -- The Andizhan - Mayli-Say gas pipeline is making possible complete satisfaction of the need of industrial and agricultural enterprises in Southern Kirgizia for fuel. This 70-km pipeline today was put into operation ahead of schedule. A more effective development of regional economy has appeared with the inauguration of the gas line, which has been run through the mountains. [Text] [Moscow PRAVDA in Russian 9 Jul 80 p 2] 5303

FIRST OIL FROM YAMALO-NENETSKIY OKRUG -- For the first time the column "petroleum production" has appeared in the reports of the statistical administration of the Yamalo-Nenetskiy Autonomous Okrug. This occurred after the Kholmogorskoye Petroleum and Gas Administration began to operate in the territory of Purovskiy Rayon, at Khanto settlement. About 1 1/2 million tons of Yamal "black gold" have already been produced. [Text] [Moscow IZVESTIYA in Russian 27 Jul 80 p 2] 5303

BALTIC AREA PETROLEUM OPERATIONS -- The ninth heavy-weight rail convoy with "black gold," produced from Kaliningrad wells during the final year of the five-year plan, produced above the plan, has moved out to the refinery from the sidings of Znamensk station on the Baltic Railroad. "More than 70 wells are now operating in five deposits of the 'Kaliningradmorneftegazprom' Combine," says G. Puriy, chief engineer of the combine.

"In accordance with the state goal we obligated ourselves to put 11 new wells into operation before the end of the present year. Due to the ahead-of-schedule exploitation of the Deymenskoye and Ladushkinskoye deposits, as provided for by the socialist obligations adopted in honor of the 26th Congress CPSU, we will put five more wells into operation. This will enable the petroleum workers to produce about a quarter-million tons of petroleum above and beyond the five-year goal." [Text] Moscow IZVESTIYA in Russian 26 Jul 80 p 1] 5303

LEAK DETECTION--The specialists of the All-Union Petroleum Scientific Research Institute for Accident Prevention (VNIiTB) have developed a device to determine sites of leaks in the column of pumping-compressor pipes. The innovation determines the sites of raw material leaks with a high degree of accuracy. The device is lowered into a well on a cable, while the information itself is transmitted to the surface in the form of electrical signals. The device operates reliably, does not react to a pressure drop, and it is not hampered by depressions on the column walls and other unfavorable factors. [Text] [Baku VYSHKA in Russian 18 Jul 80 p 3] 9035

DIESEL FUEL--As a rule, the main source of diesel fuel production is oil of different fields. However, the fuel from such a "cocktail" does not always meet the required standards. For example, in refining paraffin oils the produced diesel fuel in certain of its indicators, say, solidification point, can also not correspond to the GOST. In these cases, the diesel fuel is additionally treated. And this process is technically complicated, and is accompanied by considerable losses of solvents and original product. The new method suggested in the Yu. G. Mamedaliyev Institute of Petrochemical Processes of the Azerbaijan SSR Academy of Sciences makes it possible to produce diesel fuel with a low solidification point. For this, a fraction of diesel fuel is oxidized by air oxygen at a temperature of 120-140 degress in the presence of a special catalyst. The oil acids that remain here are valuable raw material for the production of different products used in the national economy: in paint and varnish and polygraphic industries, to produce de-emulsifiers, etc. [Text] [Baku VYSHKA in Russian 18 Jul 80 p 3] 9035

OIL WELL HEATER--It is known that by heating the underground bed an increase in its oil output can be attained. There are many methods for creating the heat focus. One of the new technical solutions has been suggested by the scientists and specialists of the Azerbaijan Scientific Research and Planning Institute of the Petroleum Industry (AzNIPIneft'). Here a well electric steam generator has been developed that is designed to inject a heat carrier into the bed during working of oil fields. The innovation guarantees the stable production of highly-heated dry steam. What is it needed for? Entering the bed, the heated dry steam reduces the viscosity and surface tension of the oil, melts the deposited heavy components in the porous medium. In the final analysis, the well steam generator improves the filtering capacity of the bed and creates conditions for accelerated displacement of oil. As a result, the periods for working the oil field are decreased, and expenditures for equipment to produce steam are drastically diminished. [Text] [Baku VYSHKA in Russian 18 Jul 80 p 3] 9035

CSO: 1822

END

END OF FICHE

DATE FILMED

Sept. 29, 1980